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California's Computer Magazine

APRIL 1988 • 42

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The MicroTimes Interview:
Ted Nelson, The Father Of Hypertext, On The Ultimate Information System

New Column: HyperCard
Activision's Focal Point

Preview:
The 13th West Coast Computer Faire

Book Excerpt:
Intro To PC Shareware

Reviews:
PixelPaint, WordStar 2000 Plus Release 3, SuperMac Trinitron Monitor, XyWrite III Plus

Ted Nelson

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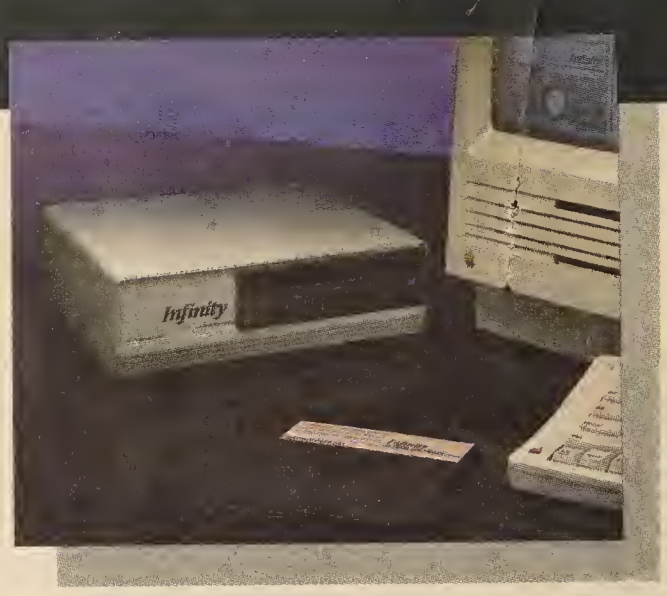

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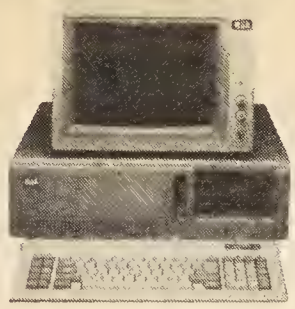

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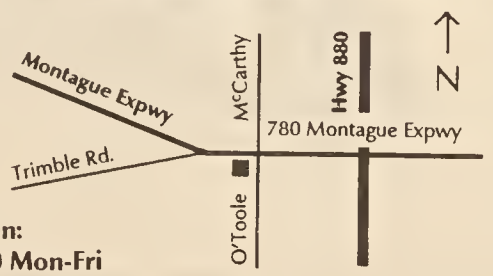

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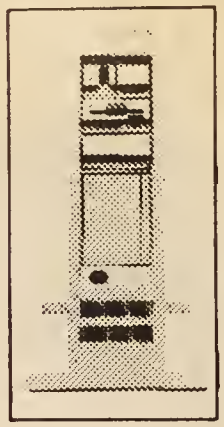

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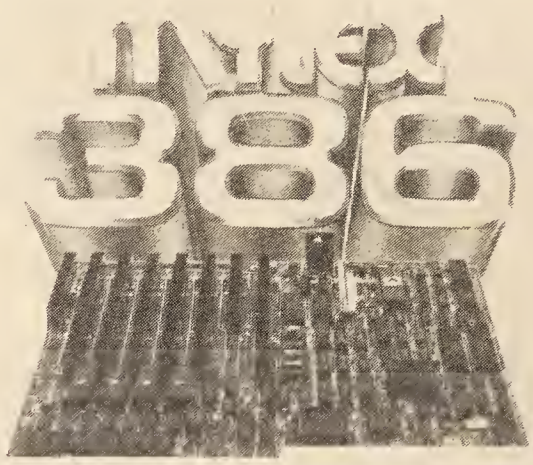

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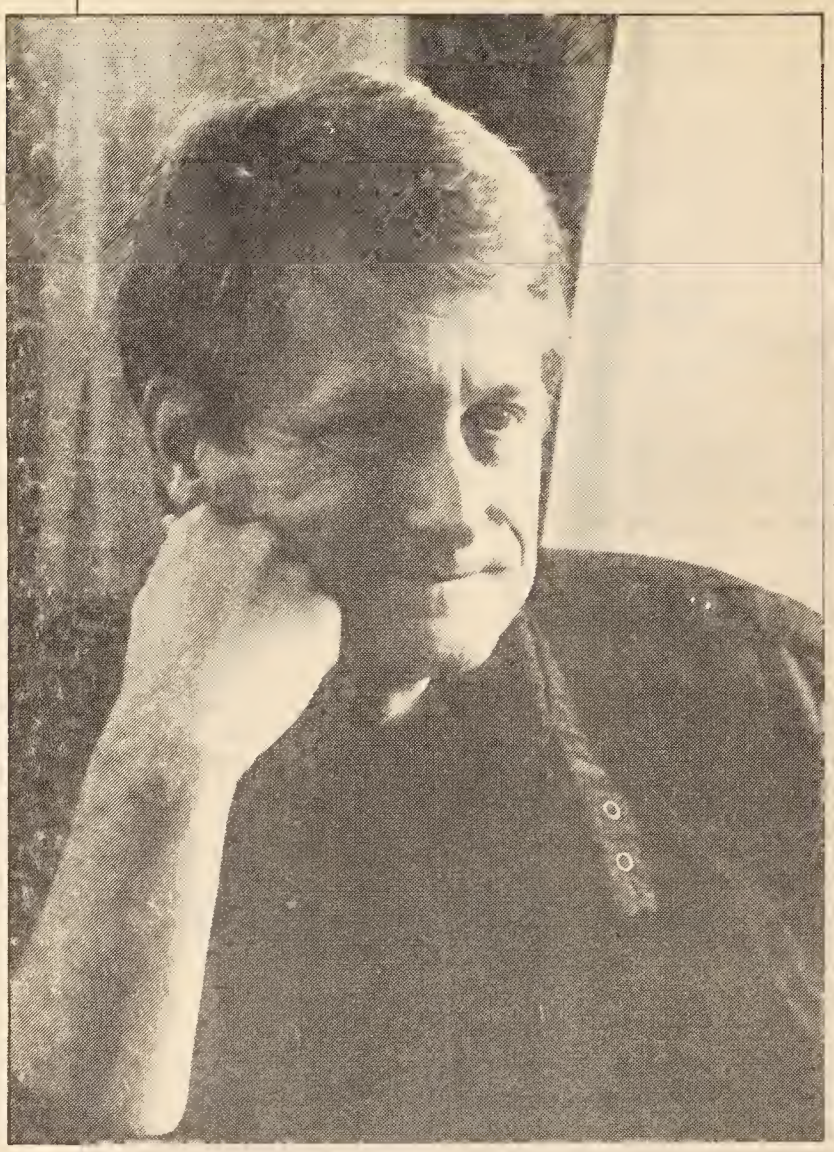

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54 Ted Nelson And The Ultimate Information Machine

By David Gans

Twenty-odd years after he conceived the idea of hypertext, Nelson is garnering new respect as the technology becomes able to support his vision. In this interview, the outspoken Nelson holds forth on the need for hypermedia, the Xanadu global publishing system, and what's wrong with the world, computer and otherwise.

After a couple of decades of crying in the wilderness about his strange concept called "hypertext," Ted Nelson is finding a newly receptive audience in today's industry.

COLUMNS

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A look at some popular pocket-sized modems.

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By Robert Beauchamp
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120 HyperCard
By Birrell Walsh
Birrell Walsh, ex-DOS user, followed his own advice and got a Mac so he could get *HyperCard*. Now he's writing a column about it. This month — Activision's *Focal Point*.

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There are times when the graphical interface isn't what you want. Here's a UNIX-like command line shell for the ST called Gulam.

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By John C. Dvorak
Macintosh in business, or, kiss the fun goodbye.

FEATURES

78 Book Excerpt: Introduction To Shareware
Taken from *Up And Running In 15 Minutes*, by David T. Anderson and Charles Seiter, soon to be published by PC-SIG, this chapter offers an introduction to powerful packages you can try before you shell out the big bucks. In fact, the bucks you'll have to shell out will be pretty minimal in any case.

132 The Berkeley Macintosh User Group
By Ruth Somberg
This hotbed of relentlessly honest Macintosh zeal could well be the Macintosh user's most valuable resource — local or not.

60 PREVIEW: The 13th West Coast Computer Faire

The 13th West Coast Computer Faire takes place at San Francisco's Moscone Center April 7—10. Admission, which includes conferences and exhibits, is $12 for one day and $20 for all four. For more information, call The Interface Group at (617) 449-6600.

Our special preview section includes a conference schedule and exhibitor list, as well as an exclusive interview with Computer Faire founder Jim Warren about the halcyon days of the micro revolution and the beginnings of the Faire itself.

HANDS ON

84 XyWrite III+
By John Cowon
Always the favorite of a vocal minority, this word processor's latest edition offers the features and power to take it beyond cult status.

94 WordStar 2000 Release 3
By Woody Liswood
If you can overcome the initially daunting experience of confronting 21 diskettes, this program offers everything you're ever likely to want in a word processor, including DTP-like features.

100 PixelPaint
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SuperMac's Mac-II-only paint package heralds a new era in graphics packages for personal computers.

104 The SuperMac Color Trinitron Monitor
By Jim Wolcott
Macintosh color that's truly worth the time we've waited for it.

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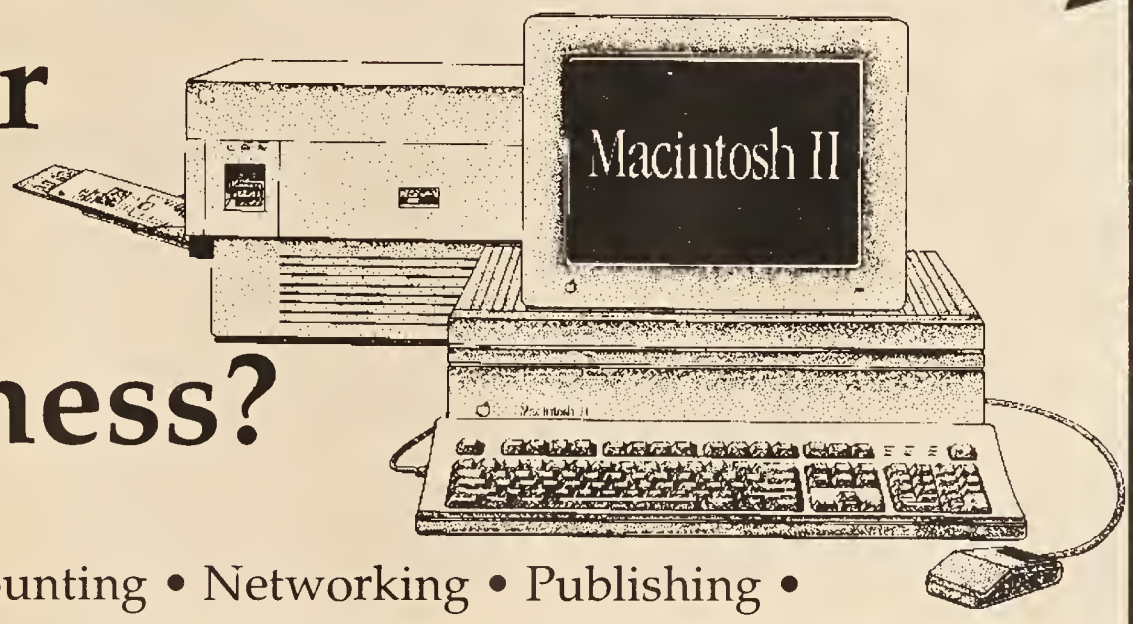

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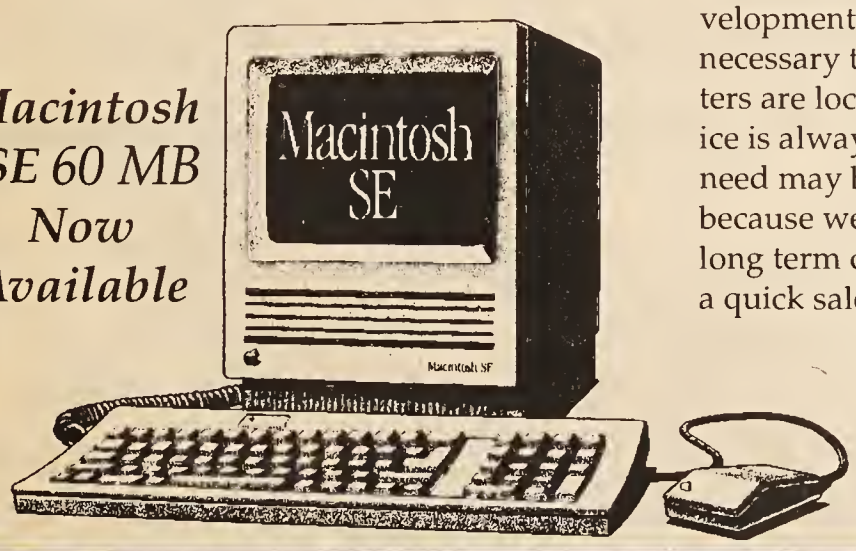

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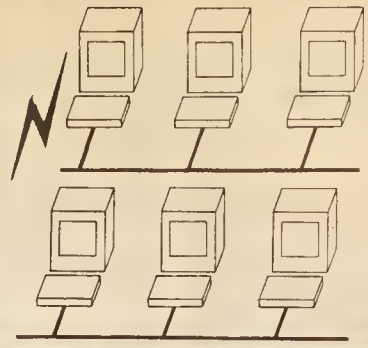

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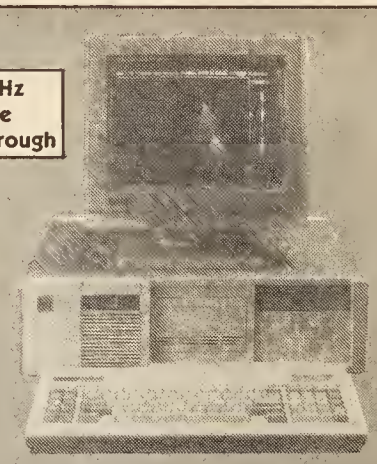

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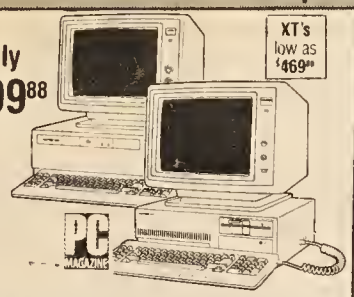

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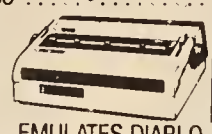

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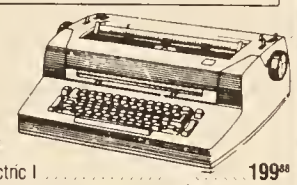

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March 15 Free Computer Workshop. West Berkeley Library, 1125 University Ave. Call 644-6870 for information.

March 16 Power Communications Skills For Women. Oakland. Call (303) 447-2300 for more information.

March 17 Power Communications Skills For Women. Union City. Call (303) 447-2300 for more information.

March 17 – 18 The Western Educational Computing Workshops. Cerritos, College, Norwalk, California. Contact Judah Rosenwald, (415) 338-1212.

March 18 Power Communications Skills For Women. Oakland. Call (303) 447-2300 for more information.

March 19 Amiga Class: Music Applications. Contact Patrick Bailey at (415) 949-4864.

March 19 A Seminar On Music Visualization — Beyond MTV. Suite 3D, 329 Bryant Street, San Francisco. Call (415) 822-7063 for information.

March 20 Marin Computer Show. San Rafael Civic Center. Golden Gate Shows (415) 388-8893.

March 20 – 23 68th ADAPSO Management Conference. Marriott Desert Springs, Palm Desert, California. Call (703) 522-5055 for more information.

March 21 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

March 21 – 23 National Database & 4th/5th Generation Language Symposium. Washington, D.C. Digital Consulting Inc., (617) 470-3880.

March 22 Seminar With James Levy, Founder And Former CEO Of Activision. Contact the Learning Access at (415) 922-9900.

March 23 How To Buy The Right Kind Of Computer For Less Seminar. Holiday Inn, Emeryville. Contact Micro-Easy (415) 235-6269.

March 24 Datalex Reseller Seminar. Datalex Corporate Headquarters, 100 Pine Street, Suite 2400, San Francisco. Contact Ellen Stewart at (415) 362-4466.

March 26 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

March 26 Computer Swap. Santa Clara County Fairgrounds, San Jose. Computer Swap America. (415) 366-9162.

March 26 San Francisco Computer Show And Sale. Fort Mason Center. Golden Gate Shows, (415) 388-8893.

March 26 Vallejo Computer Show. Solano County Fairgrounds. Golden Gate Shows (415) 388-8893.

March 26 The Amiga Class: Music Applications. Contact Pat Baily (415) 949-4864.

March 26 Computers In Business Seminar. San Francisco. Call (415) 452-1129 for information.

March 27 – 30 Software Publishers Association's Spring Symposium. Claremont Hotel, Berkeley. Contact the SPA at (202) 452-1600.

March 30 How To Build Your Own XT/AT Compatible. Fort Mason Center, S.F. Walnut Creek classes also. Registration: (415) 284-1024.

March 31 Newsletter Editing, Design and Production Intensive One Day Seminar. San Francisco. Call (313) 994-0007.

March 31 Practical Technology For A Glorious 21st Century. High Frontiers Reality Hackers Forum. Call (415) 652-2517.

April 2 Sacramento Computer Show. Cal Expo. Golden Gate Shows, (415) 388-8893.

April 5 – June 7 Advanced dBASE Programming Class. Vista College, 244 Wheeler, UC Berkeley. Call 841-8431 for information.

April 7 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

April 7 – 10 13th Annual West Coast Computer Faire. San Francisco, Moscone Center. Contact The Interface Group, (617) 449-6600, for more information.

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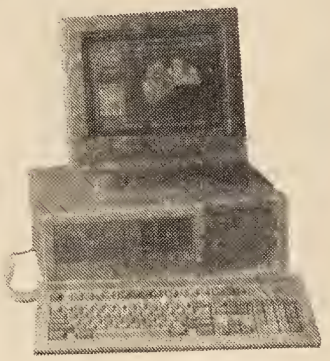

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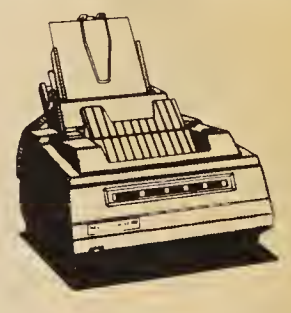

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April 9 The De Anza Computer Mart. De Anza College, 21250 Stevens Creek Blvd., Cupertino. For information call 996-4350.

April 9 Computers In Business Seminar. Sunnyvale. Call (415) 452-1129 for information.

April 11 – 13 1988 Facsimile And Image Communications Conference. Marriott Copley Place, Boston, MA. CAP International, (617) 837-1341.

April 11 – 14 Adding Image To Information Management 1988 AIIM Show. McCormick Place, Chicago, Illinois. Association For Information And Image Management (301) 587-8202 or Dan Dowd Communications (415) 593-9899.

April 15 – 16 Bay Area Business Exposition: The Business Classroom. Fiesta Hall, San Mateo County Fairgrounds. For information call: (415) 574-5730.

April 16 Computer Swap Meet. Santa Clara County Fairgrounds, San Jose. RK Productions. (800) 252-7927.

April 16 Bay Area Computer Swap. Cow Palace, San Francisco. Microshows (800) 433-7469.

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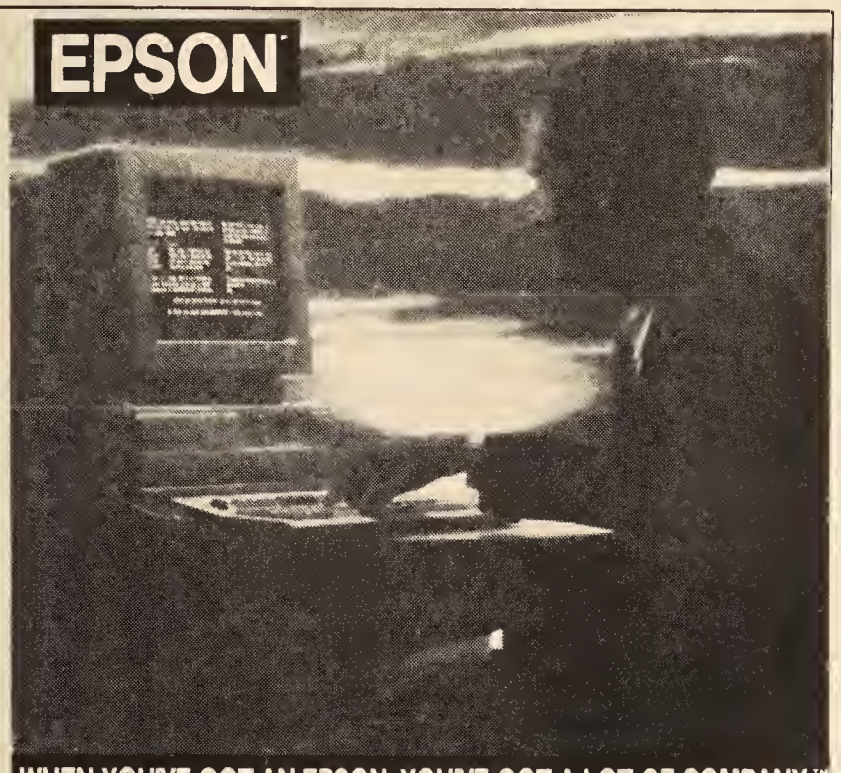

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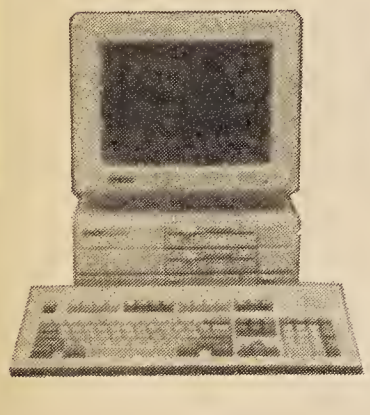

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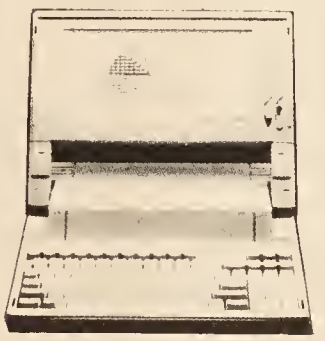

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April 23 The Amiga Class: Introduction And Overview. Contact Pat Baily (415) 949-4864.

April 23 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

April 23 Vallejo Computer Show And Sale. Solano County Fairgrounds. Golden Gate Shows, (415) 388-8893.

April 23 Macintosh Computer Graphics In Journalism. Suite 3D, 329 Bryant Street, San Francisco. Call (415) 822-7063 for information.

April 25 – 27 IBM PC-Seminar. San Francisco. Data-Tech (201) 478-5400.

April 26 How To Automate Your Business Accounting System. Gateway Holiday Inn, San Francisco. Contact Beth Markus at J.C. Lukrich & Company CPA's, (415) 864-6770.

April 28 How To Build Your Own XT/AT Compatible. Fort Mason Center. Walnut Creek classes also. Registration: (415) 284-1024.

April 30 Marin Computer Show And Sale. San Rafael Civic Center. Golden Gate Shows, (415) 388-8893.

May 2 – 3 The Elusive Payoff In Information Technology: A Conference For Senior Executives. McGraw Hill World Headquarters, New York City. Call (212) 512-4402 for more information.

May 2 – 5 AutoCAD Expo '88. McCormick Place North, Chicago, Illinois. Contact Autodesk at (415) 332-2344 ext. 799.

May 9 – 10 Understanding Local Area Networks Seminar. San Francisco. Data-Tech (201) 478-5400.

May 9 – 12 Spring COMDEX. Georgia World Congress Center, Atlanta Georgia. Contact the Interface Group at (617) 449-6600.

May 12 Time Line Workshop. Know How, Inc. San Francisco. Contact Sherri Davis, Symantec-Breakthrough Software, (415) 898-1919.

May 14 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

May 14 Santa Rosa Computer Show And Sale. Sonoma County Fairgrounds. Golden Gate Shows, (415) 388-8893.

May 14 Computers In Business Seminar. Hayward. Call (415) 452-1129 for information.

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News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

By Paul Hoffman

Apple Ships A/UX; Ashton-Tate Announces dBASE IV, Acquires Ann Arbor

Apple Ships UNIX Operating System for Mac II

A/UX, Apple's version of UNIX, was formally released at the UniForum convention in Dallas last month. The long-awaited program immediately generated a great deal of interest from many parts of the UNIX community. Many Apple watchers expect A/UX to become one of the best-selling versions of UNIX this year, which would in turn increase Apple's sales of Mac IIs. A/UX allows UNIX users to run many standard Macintosh programs using the familiar Macintosh interface.

When Apple announced A/UX almost a year ago, they expected it to ship last August. The delivery was delayed significantly due to the complexity of mixing the UNIX system with Macintosh's capabilities. Even with the delay, Apple did not get all the features they wanted in the first release, and has promised that there will be regular updates that will add functionality. This matches their recent trend in releasing new versions of the Macintosh operating system approximately every six months.

The Apple announcement was one of the most-discussed topics at the UniForum show (see below). Although A/UX has only a few features that are different from UNIX versions from other hardware vendors, the cost of a Mac II running A/UX is quite low relative to other systems of equivalent power. The additional ability to run Macintosh programs makes the system very attractive to people who want the power and ease-of-use of the existing base of Macintosh programs, but also want the power of the high-end programs that are only available under UNIX.

A/UX comes with the full complement of AT&T utilities, including the documentor's workbench for creating documents and the programmer's workbench for programmers. A/UX is based on UNIX System V.2.2, conforms to the System V Interface Definition (SVID), and has passed AT&T's System V Validation Suite (SVVS). Apple has added extensions from the popular Berkeley 4.3 version of UNIX as well.

Apple added many features that are absent in many UNIX systems in order to both differentiate the Mac II and to make the system easier to use. People writing UNIX programs have easy access to the Macintosh Toolbox, the part of the system that creates the Mac's user interface. Thus, a company that is converting its software to A/UX will be able to make their program look like a regular Macintosh program. A/UX comes already loaded on hard disks, reducing the need for tapes. Apple also included utility software to automatically configure the system when new hardware is added and to recover gracefully from system failures. These two areas have always been sore points for users of other versions of UNIX. Apple's additions allow less technical people to use A/UX.

Many UNIX software vendors joined Apple during its A/UX announcement. The three top data base manufacturers announced their support for A/UX and the Mac II as a data base platform. Oracle, Informix, and Ingres all said that they intend to port their products to A/UX in the very near future, and Informix was showing already-ported versions of many of its software products. In addition to these announcements, other large UNIX houses announced support for A/UX. A/UX will have a large number of popular programming languages. Alsys announced that it has already ported its validated Ada compiler to A/UX, Franz announced that Allegro Common LISP will be available soon, and UniSoft announced C, FORTRAN, and Pascal compilers. The Grasshopper Group is making Sun's NeWS windowing system available under A/UX.

UniSoft was the company that was helping Apple develop A/UX, and it came under a great deal of scrutiny due to the lateness of the operating system and the fact that many features announced last year did not appear in the product. UniSoft

Paul Hoffman is a freelance writer who has written five books about computers.

Dvorak Named Readers' Choice

In a recent poll by *Micro Media Notes*, published by Cambridge Communications, John C. Dvorak was chosen over other leading industry observers as the readers' favorite columnist. Completing the statement "The columnist or commentator I pay most attention to is..., 22% of the readers responding chose Dvorak. Stewart Alsop and Jim Seymour tied with 14% each, and the remaining 50% of the vote went to a field including Bill Machrone, Esther Dyson, Eric Sandberg-Diment, Ed Bride and Peter Norton.

Congratulations to Dvorak as he continues to outrage and delight readers from coast to coast.

— *eds.*

Correction:

In our MicroTimes 100 listing (January 1988), we inaccurately rendered the name of Mr. William Lohse, Ziff-Davis Group Vice President in charge of *PC Magazine*, *A+*, and *MacUser*, as David Loese. We sincerely apologize to Mr. Lohse, Ziff-Davis and any others who may have been inconvenienced by this error.

— *eds.*

Kenfil Announces Top Software Sellers

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Last Month	March	
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2	2	WordPerfect
3	3	Quattro
6	4	Turbo Pascal 4.0
5	5	Managing Your Money
4	6	Turbo C
7	7	FormTool 2.0
–	8	Paradox
12	9	Dac-Easy Accounting
–	10	LapLink Plus
–	11	MathCAD
9	12	WordPerfect Library
15	13	Clipper
–	14	Brooklyn Bridge
13	15	GEM Draw Plus

UTILITIES—MS-DOS

Last Month	March	
1	1	Norton Utilities Advanced
8	2	Direct Access
5	3	Fastback Plus
7	4	Mace Utilities
4	5	Disk Technician Plus
6	6	Sideways
3	7	Norton Utilities 4.0
12	8	DESQview
9	9	Disk Optimizer
10	10	Print Q
11	11	PC Tools
2	12	XTree Professional
–	13	Norton Editor
14	14	SeeMORE
–	15	Software Carousel

MACINTOSH

Last Month	February	
–	1	MacinTax
2	2	Dark Castle
3	3	Superpaint
5	4	Suitcase
4	5	Canvas
1	6	Mac Money 3.0
–	7	Mac Coach
–	8	MacTREE
6	9	Write Now
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Source: Kenfil Distribution, Van Nuys, CA. "Kenfil March Bestsellers."

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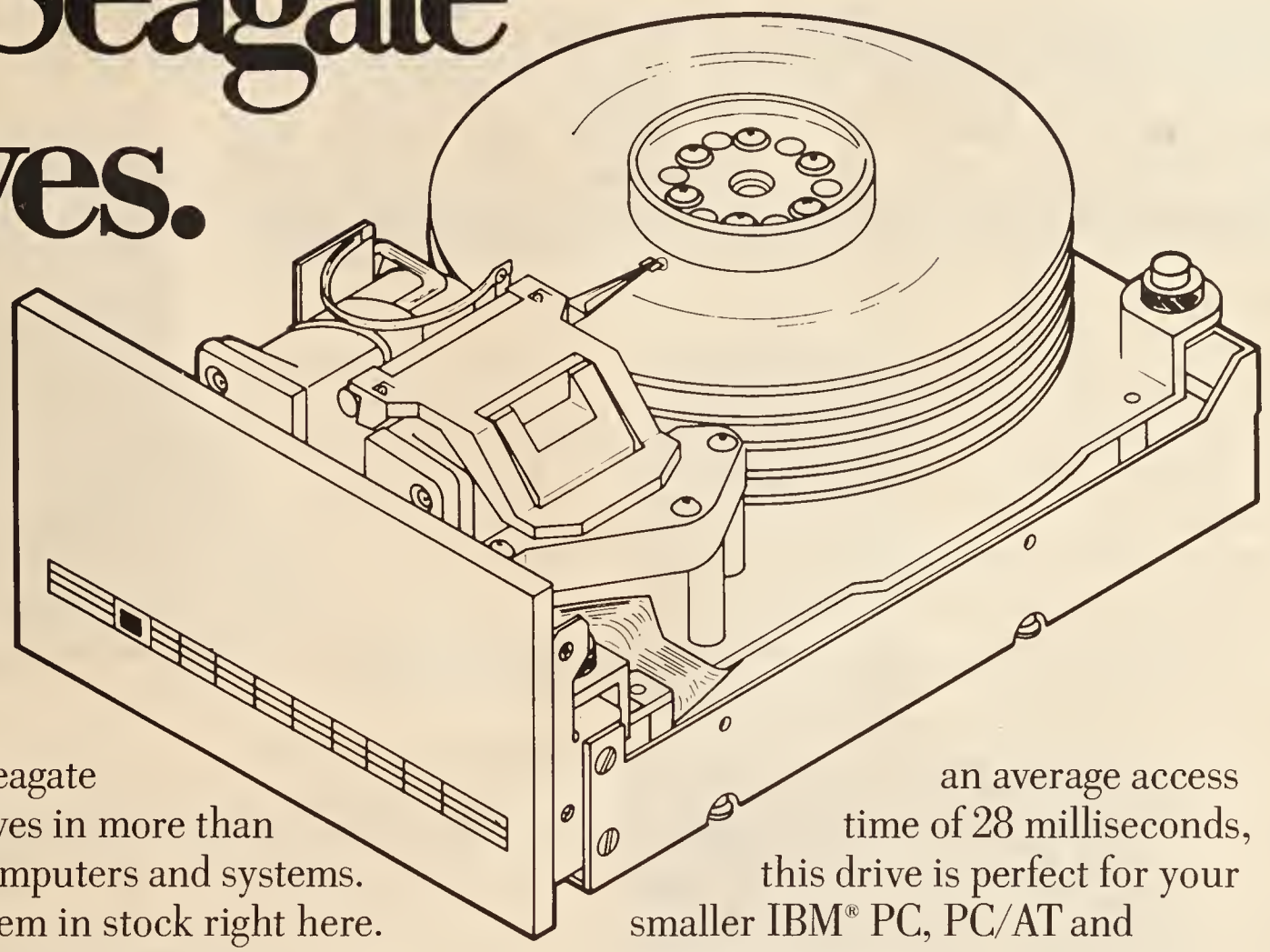

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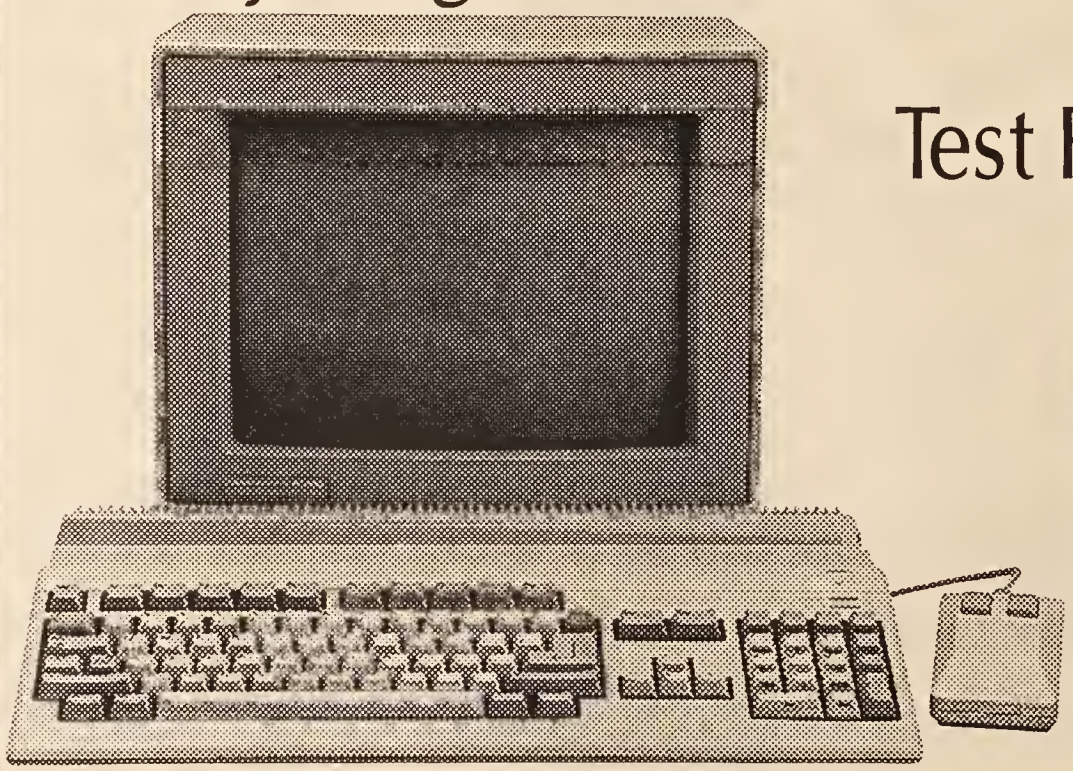

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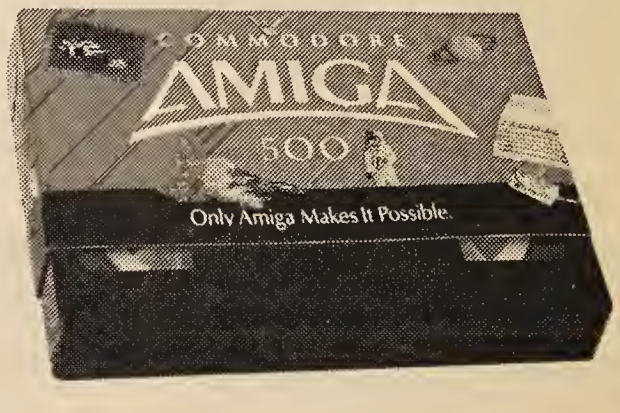

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has recently seen a large turnover in staff on the A/UX product, and Apple said that much more of the development of A/UX would be done at Apple in the future. Apple is also relying on third-party developers to market the same additional applications and utilities that are available for other versions of UNIX. R Systems, a large UNIX vendor, announced the availability of its line of office software on A/UX.

Many Macintosh hardware vendors announced the compatibility of their hardware with A/UX. Jasmine announced a line of A/UX-compatible hard disks, SuperMac announced a new communications controller board that allows A/UX to communicate with LocalTalk (previously AppleTalk) networks, Irwin announced a family of A/UX tape drives, and National Semiconductor announced that its NS 8/16 Memory Expansion Board works with A/UX.

Although the news of A/UX and its capabilities were widely discussed at UniForum, so were its limitations. The biggest letdown for many people at the show was the number of Macintosh programs that do not work under A/UX. None of the programs from the two largest Macintosh software manufacturers, Microsoft and Claris, works with A/UX. This means that A/UX users cannot directly access the two most popular word processors, Microsoft Word or MacWrite. Neither Microsoft or Claris would say when they expected their programs to work under A/UX. However, this does not prevent A/UX users from using the programs: they can start their Mac IIs running the Macintosh operating system, run their Macintosh programs, then launch A/UX. To switch from A/UX to the Macintosh operating system, they must shut down the computer, although Apple will make the transition between the two operating systems easier in future releases.

Apple is adding its first for-cost customer service with A/UX. For $3,395, you can get one year of technical support for A/UX with a toll-free hotline and problem-tracking service. Many competitors at UniForum made fun of the high cost of this service, claiming that they offered the same service for free or for a few hundred dollars per year. Apple staff said that they expect to upgrade A/UX on a regular basis and that the upgrade costs would be fairly low. In addition, they said that the procedure for upgrading versions of the operating system would be much easier than with most UNIX systems.

Other features that did not make it into the first release of A/UX also disappointed many UNIX users. Obvious parts of the Mac interface such as sound and color are not available. You cannot run more than one program at a time, as you can under most UNIX systems. LocalTalk, Apple's main-line networking system, is also unavailable. It is likely that Apple will add these features in future releases of A/UX, although they did not say when any specific features would be added. Also, A/UX will not run on Mac SEs with accelerator boards, even if the boards have the required memory-management chips. If Apple can make A/UX work on those systems, they will open up a market that is expected to be over 100,000 Macintosh systems by the end of the year.

Apple offered four ways to buy A/UX. A monochrome system costs $8597, while a color system costs $9346. If you already own a Mac II, you can upgrade to A/UX for around $4900; this includes the 80 megabyte hard drive that comes with A/UX on it. A development system with extra RAM will cost over $10,000. Apple will also sell site licenses for A/UX in sets, so that a company can develop A/UX software and sell their software bundled with A/UX.

Apple did not make an official announcement of how many copies of A/UX they expect to sell, although many people in the Apple booth at UniForum said that they think that they will sell 40,000 copies this year. If they reach that figure, A/UX will become one of the best-selling versions of UNIX in an extremely short time. This will certainly have a significant effect on the manufacturers of other UNIX systems that are based on the 68000-family chips, whose sales are much lower than that. People considering which UNIX system to buy will likely be swayed to the Mac II due to its ability to run Macintosh software as well as UNIX software.

UniForum Brings Out The UNIX Masses For New Products

Just as many PC software and hardware manufacturers wait to make their product announcements at COMDEX or the West Coast Computer Faire, many UNIX vendors waited until last month's UniForum to announce new products. Although Apple's announcement of A/UX dominated the show (including Apple's president John Sculley giving the keynote address that opened the show), many other major UNIX vendors jostled for the attention of the press and attendees with their announcements.

AT&T gave a hint about what UNIX System V Release 4 would look like. The company said that they will incorporate features of Microsoft's XENIX, Sun's SunOS, and Berkeley 4.2 and 4.3 UNIX into the new release of UNIX. They will also add new features such as a real-time kernel (which allows machines that need to act on quick

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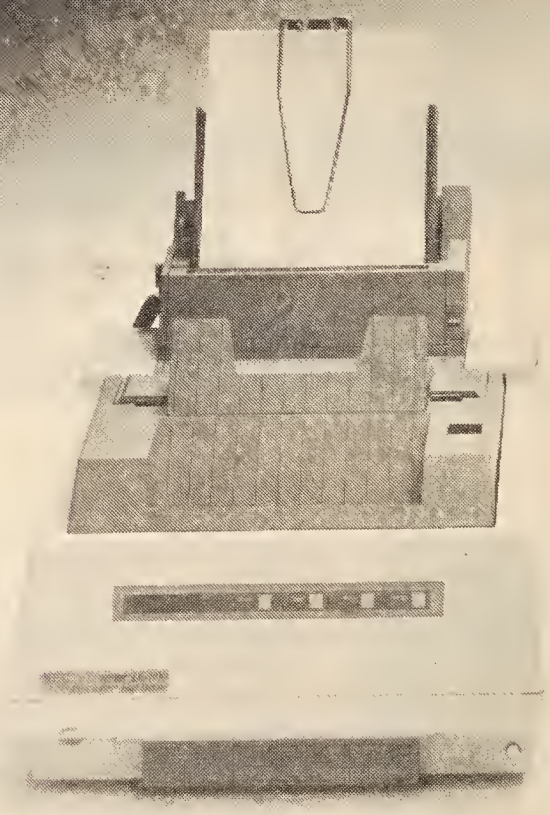

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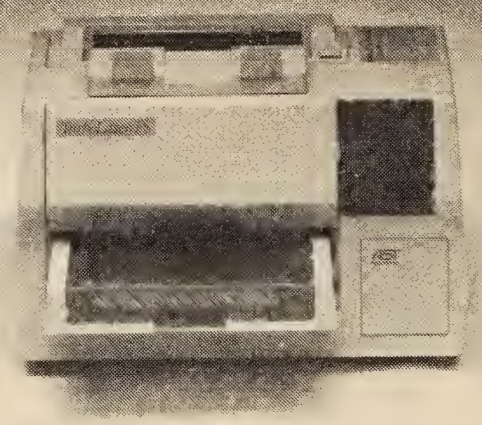

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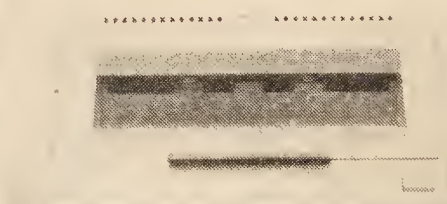

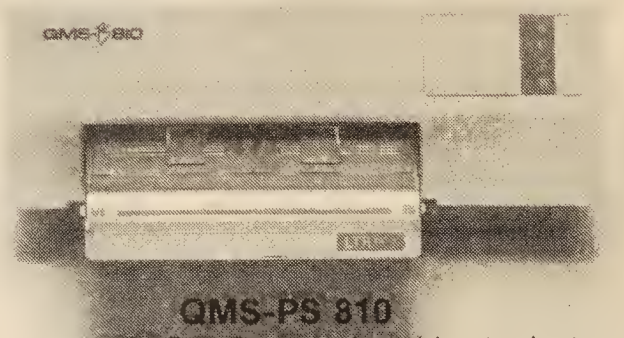

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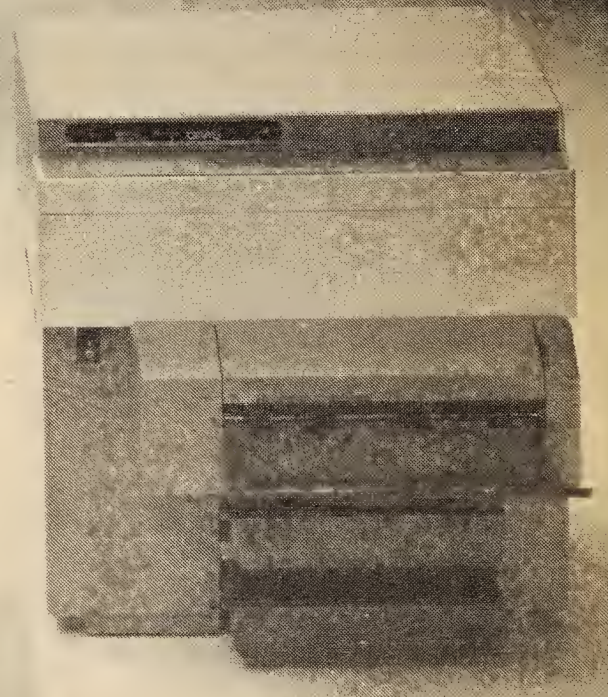

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timing to be controlled by UNIX), better networking, better support for international users, and general improvements to the user interface. The new release will also conform to POSIX and X/OPEN, standards that allow software manufacturers greater freedom from writing for individual versions of UNIX. The new release should be available by the end of 1989.

AT&T is trying to keep UNIX hardware manufacturers happy after a large number of vendors complained that AT&T is favoring Sun in future developments of UNIX. AT&T made great pains to indicate that System V Release 4 will be ported to the Intel 80386 before it is ported to Sun's SPARC architecture. Jack Scanlon, AT&T's vice president for UNIX development, said that no UNIX manufacturer was going to get preferential treatment, but many remained skeptical.

Among others making product announcements:

• Microsoft and Hewlett-Packard are developing a version of Microsoft's OS/2 LAN Manager for UNIX. The software will allow UNIX systems to act as file servers for computers running Microsoft Networks and OS/2 LAN Manager software. Microsoft hopes that this will strengthen the position of its OS/2 LAN Manager in the OS/2 world, and give MS-DOS and OS/2 users on networks with UNIX users easier access to files on UNIX systems. The program, called LM/X, will be available in early 1989.

• Locus Computing showed *Xsight*, a program which gives X-Windows capabilities to computers running UNIX System V on Intel 80386 CPUs. Using *Xsight* with Locus' Merge 386 program allows those computers to use the X-Windows standard graphics on the same screen with MS-DOS programs. Locus also showed *PC-Xsight*, the first program that allows PCs running MS-DOS to act as inexpensive graphics work stations when networked with systems running *Xsight*.

• TOPS showed TOPS/VMS, which allows Mac and PC users running TOPS to access files on a DEC VAX running DEC's VMS operating system. TOPS/VMS was also shown at DEXPO East, where it generated a great deal of interest in the DEC market since it uses Apple's LocalTalk protocols. Apple and DEC have previously announced an agreement to work together developing tighter connections around LocalTalk, and TOPS/VAX is one of the first products available that exploits that connection.

• Intergraph announced that they will make the CLIPPER reduced instruction set chip (RISC) set available to other manufacturers as a four-chip set. CLIPPER runs UNIX at very high speeds, and allows manufacturers who want to stray from the Intel and Motorola standards to build relatively inexpensive high-end computers. The chip set allows manufacturers more flexibility than the previous board that Intergraph sold.

• IBM said that AIX, its version of UNIX, will conform to its SAA standard on almost all levels. This reassured many IBM users that IBM was indeed considering UNIX a real part of its world, not simply a satellite. IBM also announced improvements to AIX on the PC/RT and PS/2 Model 80. IBM also announced an agreement with the National Bureau of Standards to develop tests that will check conformity with the UNIX standards of the IEEE. Many UNIX industry leaders think that these tests will compete with AT&T's SVVS.

• Motorola introduced the UNIX Binary Compatibility Standards (BCS) for computers using Motorola CPUs. They were joined by more than 30 hardware and software vendors in their move to make BCS a standard for sharing applications and functions between applications.

• Apollo Computer showed its new Domain/OS operating system, a distributed version of UNIX. Domain/OS allows users to share files and devices with other computers on a network, and even al-

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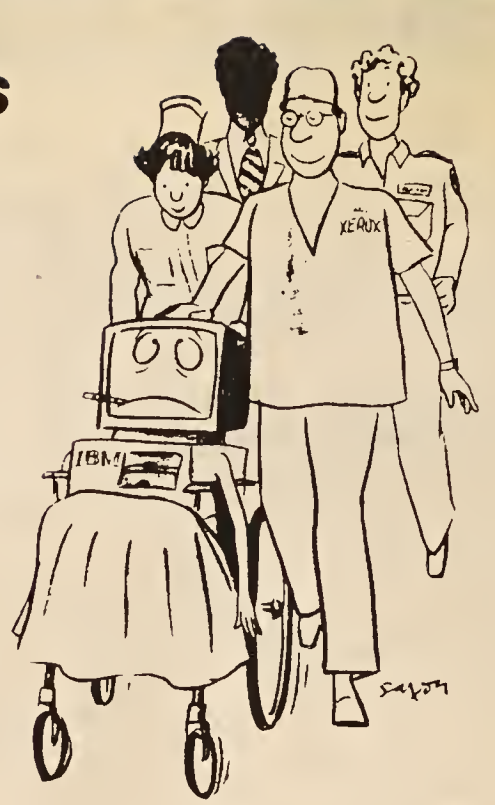

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lows them to share tasks among computers. For example, a large problem being calculated on one computer could be split to many computers, each of which would work on a small part and send information back to the original computer. Domain/OS also supports all European languages directly, giving Apollo a large advantage in the growing European UNIX market.

• Informix Software and Innovative Software, two of the giants in the UNIX software industry, completed their merger. The new company, which retains the Informix name, becomes the tenth largest public software company in the country. The software lines of each side of the company (data base management for Informix and office automation for Innovative) will continue with only minor changes.

Ashton-Tate Buys Ann Arbor Softworks, Will Sell New Spreadsheet On The Mac

Ashton-Tate joined the vapor-products industry last month by announcing its acquisition of Ann Arbor Softworks, the maker of *FullWrite* Professional for the Macintosh. *FullWrite* has been delayed for over a year since its announcement, and will probably not ship until May. The company also announced that it will sell a new product, *Full Impact*, which will attempt to challenge *Excel* in the spreadsheet market for the Macintosh. *Full Impact* will allow users to combine text and graphics in their spreadsheet. The product is not expected to ship until August. Ashton-Tate, 213/329-8000.

dBASE IV To Include SQL And Compiler

Ashton-Tate also announced d*BASE IV*, which is not expected to be shipped until after July. d*BASE IV* will support the SQL standard, although data cannot be moved from a d*BASE* database to an SQL database. This means that the SQL portion of d*BASE IV* will only be useful for data base developers intending to use SQL from another vendor later. Programmers wanting a real SQL environment must use the *SQL Server* announced by Microsoft and Ashton-Tate earlier this year.

The new program will also include a compiler, which means that programmers can develop programs for people who do not own d*BASE IV*. The compiler reads normal d*BASE IV* commands and turns them into an executable program like other applications. Many vendors already offer d*BASE*-compatible compilers, and the market for them has been well-established.

Ashton-Tate says that all programs and data bases developed for d*BASE III* will work with d*BASE IV*. In addition, d*BASE IV* will have a second interface which is much easier to learn and use, according to Ashton-Tate. The new user interface will include extensive menus and screen prompts, much like many of d*BASE III*'s competitors. In a bow to *Paradox*, one of d*BASE III*'s biggest competitors, d*BASE IV* will also allow the user to teach it queries by example. This means that if you use a query that does not follow the rules exactly, but the program can determine what you want, future queries can use the same structure. Other new features include calculated fields, data validation, and line drawing.

One feature that will certainly be appreciated by end users will be the ability to combine many databases into a single view. This allows a greater flexibility and makes each screen design much more useful. Since many of Ashton-Tate's competitors make using relational data much easier than in d*BASE III*, this will quell some of the criticism of the program's ease-of use. d*BASE IV* will

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also allow you to automatically index your data bases.

Programmers will also appreciate the ability to create windows with pull-down menus. In its announcement, Ashton-Tate said that it relies heavily on programmers to create data base systems for non-programmers, and that *dBASE IV* will have many new features for creating such programs. In addition to windows, programmers will be able to customize pre-formed template programs and can add encryption and file locking.

Ashton-Tate will make *dBASE IV* available for both MS-DOS and OS/2. The standard edition will cost $795, while the data base developer's edition will cost $1,295. Upgrades will be available for current users for $175; people who buy d*BASE III* until July 31 will be able to upgrade for $30.

Microsoft Announces New Languages For OS/2

People writing programs for OS/2 got a shot in the arm from Microsoft with its announcement of versions of all its major languages for OS/2. With these languages, developers can write programs that work under OS/2 or MS-DOS; in some of the languages, they can write programs that run under both operating systems. The languages, which will be available in the next two months, will greatly increase the number of programs available for OS/2, according to Microsoft. Microsoft also added features to the languages, such as a new programmer's editor (creatively named Microsoft Editor) and improved versions of CodeView. Microsoft stressed that each language could create programs for both operating systems, letting the programmer decide which environment he or she wanted the programs to run in. The new versions of the languages are C 5.1, BASIC Compiler 6.0, Macro Assembler 5.1, FORTRAN 4.1, and Pascal 4.0; upgrades will be available for owners of current versions of the languages.

Microsoft Editor is intended as a complete development environment. The editor allows you to compile and link parts of your program without leaving the editor. Error messages are sent back to the editor, which flags the lines of the program which contains the errors. Programmers' environments such as this have been available from other vendors for many years, but this is the first time that one has been available from Microsoft. The fact that the Microsoft Editor is free will increase the competition among the sellers of other editors. Microsoft Editor will run under MS-DOS and OS/2. The OS/2 version will use OS/2's multi-tasking to allow steps of the programming process to proceed at the same time.

Microsoft also announced the OS/2 Programmer's Toolkit which helps programmers learn more about programming for OS/2.

In a separate announcement, Microsoft said that it plans to release a version of Microsoft *Word* for OS/2 later this year, coinciding with a new version of *Word* for MS-DOS. It will bundle the MS-DOS and OS/2 versions of the product in the same package for one price, and the two programs will have the same user interface. Microsoft will also release an OS/2 version of its *Multiplan* spreadsheet in May. Microsoft, 206/882-8080.

Sun Introduces New SPARC Workstation

Calling it the first supercomputing desktop workstation, Sun announced its newest computer based on its SPARC architecture last month. The Sun-4/110 is a smaller version of Sun's 4/260 computer introduced last year. The 4/110 is about 75% as fast as the 4/260, but costs half as much (around $19,000). The computer is intended for people with compute-intensive tasks such as numerical

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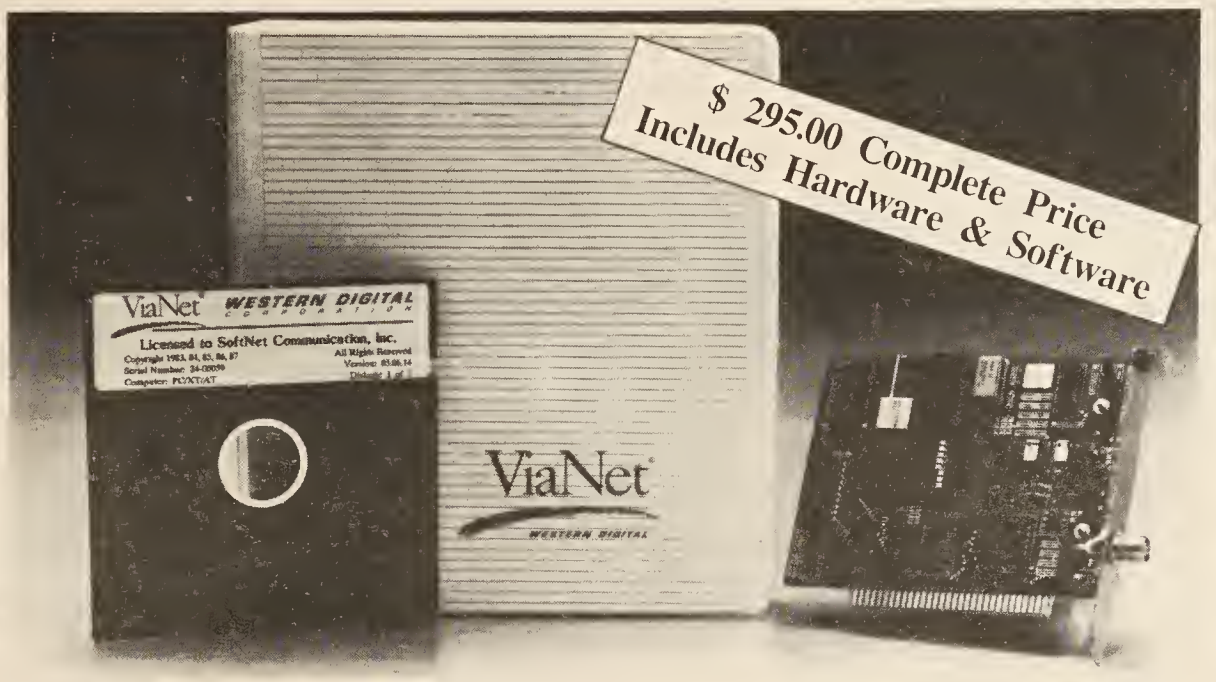

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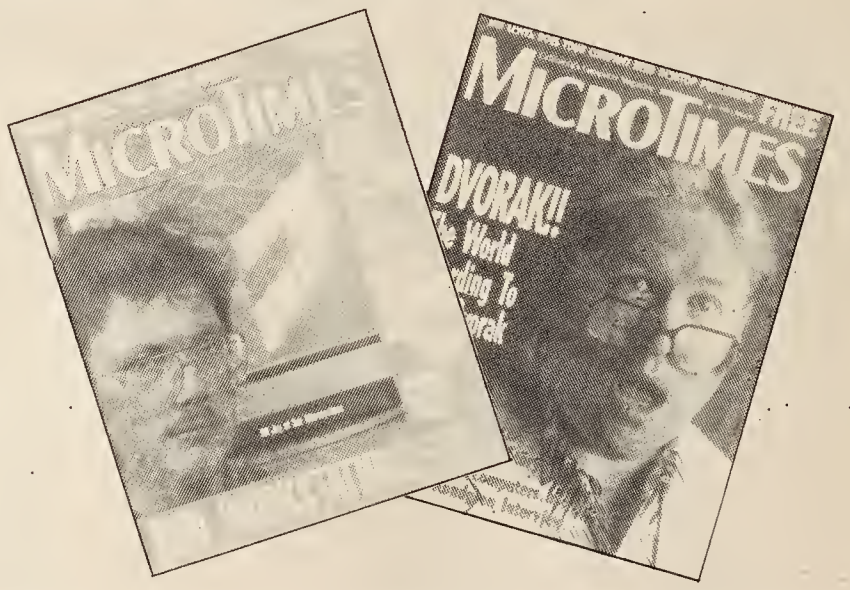
No Other Magazines Were Mentioned!

That's right! In a recent survey, the Copley Newspaper Group asked computer retailers in California, "What Magazines Were Most Popular With Their Customers?"

Here are the results:

1. PC Magazine
2. Byte
3. **MicroTimes**
4. MacUser
5. MacWorld
6. Lotus
7. Infoworld
8. Newsweek
9. Time



That's it. No other magazines were mentioned. Computer hardware and software retailers in California agree—there's only one local magazine their customers depend on. MicroTimes.

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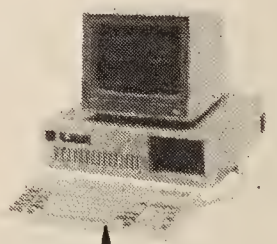

$549 Base System

analysis and artificial intelligence. It runs Sun's version of UNIX and comes with eight megabytes of memory (expandable up to 32 megabytes) and an Ethernet port in the computer. Sun Microsystems, 800/821-4642.

California Information Bill Of Rights Passes Committee

Assembly Constitutional Amendment 36, better known as the Information Bill of Rights, was passed by the Assembly's Elections, Reapportionment, and Constitutional Amendments committee on a 6-0 vote. The full Assembly will vote on the bill soon, according to Gwen Moore (D-Los Angeles) who wrote the bill and has shepherded it through its long journey. The bill will add electronic communications to the freedom of speech and privacy protections in the California constitution. Moore hopes that the bill will increase the viability of California's information industry since it gives electronic information providers the same rights as other media such as newspapers and television. Dozens of people from around the state joined in the grass-roots campaign before the committee to have the bill passed.

Tandem To Buy Ungermann-Bass for $260 Million

Tandem Computers, known for its strength in the mid-range computer market, will buy Ungermann-Bass, one of the leaders in computer networks for all sizes of computers. Tandem said that the differences in the companies makes the purchase of Ungermann-Bass all the more interesting. Although Tandem is huge relative to Ungermann-Bass ($1 billion in sales vs. $150 million), it has been historically weak in its efforts to link with computers from other manufacturers. The two Silicon Valley companies will continue to push their products individually, although Ungermann-Bass will become a subsidiary of Tandem when the stockholders approve of the pact in the next few months.

Computer Automation Flexes Muscles With MCA Patents

In one of the opening shots in the long-expected legal battles over the PS/2, Computer Automation of Irvine has been demanding royalties and licensing fees from companies creating PS/2 clones and even manufacturers of boards that work with the PS/2. Computer Automation claims a patent on some of the technology that IBM used when it created the Micro Channel Architecture, and IBM has paid a fee and royalties for the patent. Now, some hardware manufacturers are balking at Computer Automation's demands for money, claiming either that the patent is invalid or that their devices do not infringe on the patent. The largest company to challenge Computer Automation is Quadram, which claims that the techniques it uses in its PS/2 memory boards do not fall under the patent.

Ed Esber Joins Board Of Directors At Activision

It's a long way from business products to games, but Ed Esber, chairman and CEO of Ashton-Tate, wants to be in both worlds. Activision announced that Esber has been elected to their board of directors. Activision is known primarily for its wide variety of computer games (Activision calls these "interactive electronic media"), and is one of the largest software manufacturers in the country. Although Esber has never worked in computer games before, he is widely acknowledged as an energetic leader and should help Activision in the future.

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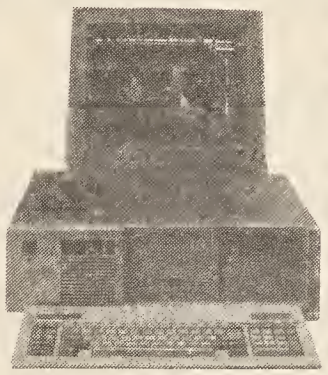

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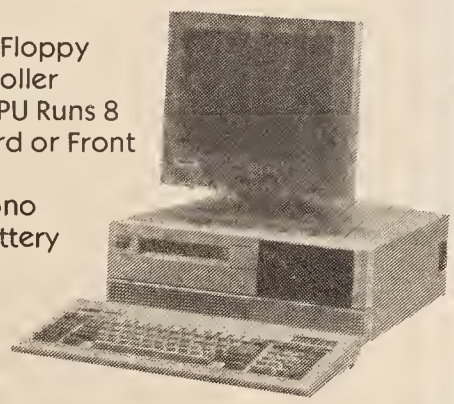

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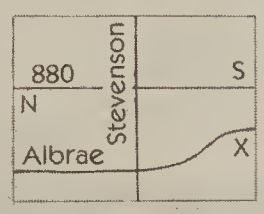

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ACCESSORIES

SoftSwitch

By: *Ken Kashmarek*
Designed by: *Roger Wagner*
Published by: *Roger Wagner Publishing (1987)*
For: *Apple IIGS (768K)*
List Price: *$59.95*
Reviewed by: *Mike Markowitz*

SoftSwitch is a strange and wonderful program that, in effect, puts three virtual Apple IIe computers inside your Apple IIGS.

SoftSwitch installs itself as a Classic Desk Accessory, which means it is accessed by pressing <control> <open-apple> <escape>. Any ProDOS 8 or DOS 3.3 program that permits itself to be interrupted can be stashed in its own "workspace" by *SoftSwitch*. It remains there, in suspended animation, while you go off and do something else with another program. While this is not exactly a true multi-tasking environment, it has a lot of practical applications. You can easily switch between programs, which is often quicker than booting each one separately. You can also capture certain kinds of graphics, and "paste" them into programs that normally could not access them.

The *SoftSwitch* display consists of several windows that show miniature screen images. There is a window for each of the three stored workspaces, and another for the current suspended program. The date and time of suspension is shown for each window, along with your current memory status.

Although the concept behind *SoftSwitch* may be a little hard to grasp, using the program is very simple. The main commands are simply the digits 1, 2 and 3. According to context, the program will interpret these keystrokes as instructions to load or switch a workspace. Open-Apple followed by a number will clear a workspace.

SoftSwitch includes another application called Keepsake, which can be used to freeze the current state of a program and save it to disk. This is handy for adventure games that do not provide their own game save feature.

Programming wizard Roger Wagner was able to make *SoftSwitch* work with as little as 512K of expanded memory (beyond the 256K the IIGS is born with). He was not able, however, to make it work with most ProDOS 16 applications, because they violate "good programming practices" in various ways, such as turning off access to the desk accessory menu. Also, there isn't enough memory on most GS RAM expansion cards to accommodate two ProDOS 16 programs plus *SoftSwitch*.

Documentation includes a comprehensive 78-page spiral-bound manual and an eight-page Quick Start guide. The manual is packed with specific tips on using *SoftSwitch* with various graphics programs. Registered owners receive a free backup disk. *SoftSwitch* uses a unique copy protection scheme that involves setting a bit in the IIGS's battery-backed RAM. Only the installation disk is copy-protected; you can install the program on any system disk you own. You can use one copy of the program on no more than two different computers.

SoftSwitch should be particularly useful to people who program, develop, test, demonstrate or write documentation for Apple II software. For average users, it offers the tantalizing possibility of making almost any program a "Desk Accessory" to any other program. (Roger Wagner Publishing, Inc., 10761 Woodside Avenue, Suite E, Santee, CA 92071 (619) 562-3670.)

Timeout Desktools

By: *Howard Bangerter, Alan Bird, Glenn Clawson, Mark deJong and Dan Verkade*
Published by: *Beagle Brothers (1987)*
For: *Apple II series*
List Price: *$49.95*
Reviewed by: *Mike Markowitz*

The marketplace for *AppleWorks* enhancements is a battlefield, where features and convenience are the major weapons. For several years now, the competing vendors have been playing a game of "Can you top this?"

Timeout Desktools will be a tough act to follow.

The package includes a calculator, calendar, case-converter, clock, phone dialer, envelope addresser, file encrypter, notepad, page preview, puzzle, word counter and other utilities. There is also a Data Converter that fixes one of the frustrating limitation of the *AppleWorks* Clipboard — it lets you transfer data between spreadsheet and database files. Any of these accessories can be summoned from a menu that pops up when you press <open-apple> <escape>. In the Beagle Brother's tradition, this program also provides several useful little extras, such as a patch to *AppleWorks* that makes <Control> <Reset> return you to the Main Menu, rather than the machine-language monitor.

Desktools is provided on both 3.5" and 5.25" media. A 94-page manual closely follows the format and conventions of Apple's own documentation. Like the other programs in the *Timeout* series, *Desktools* is compatible with most other *Apple-*

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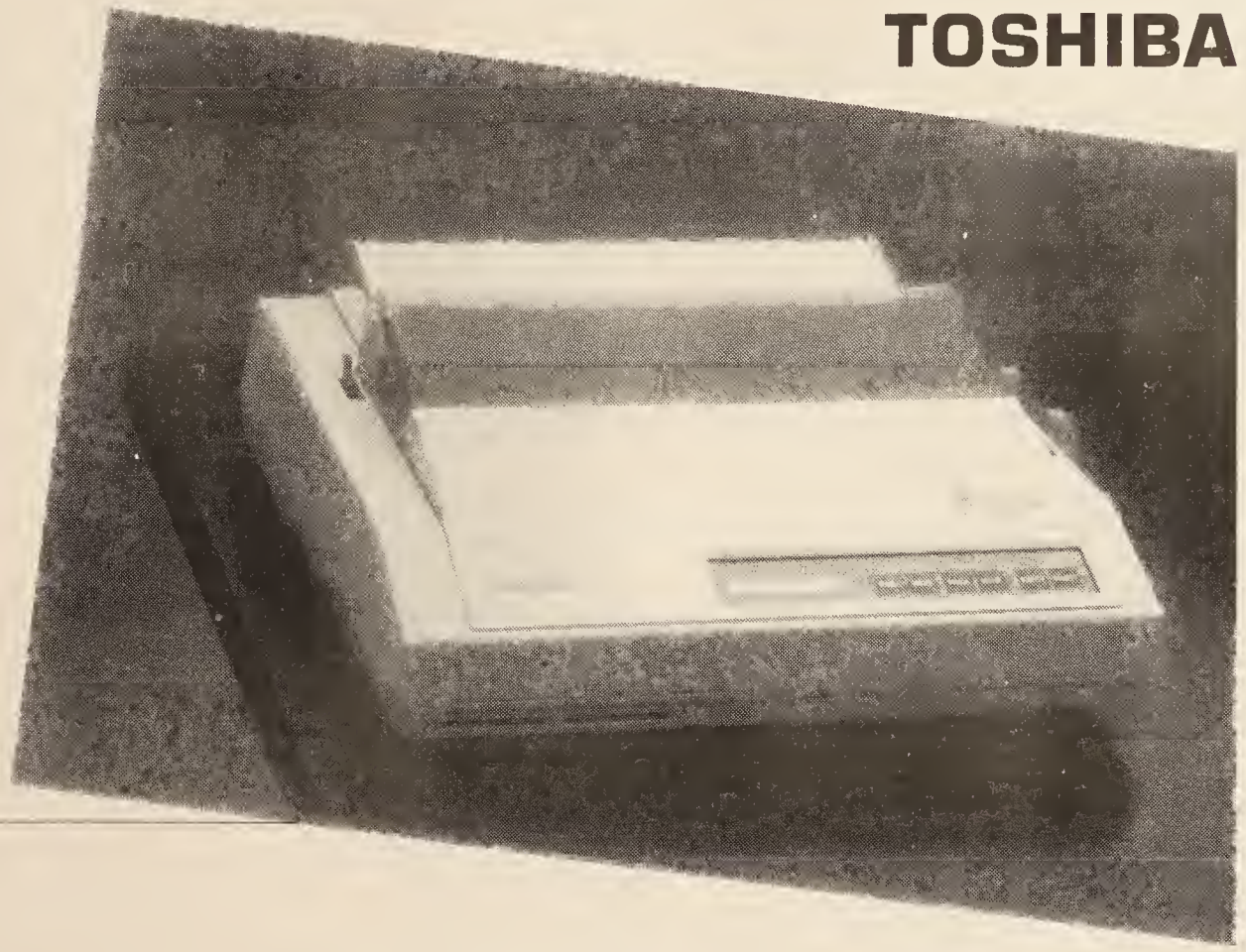

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The *Desktools* calculator is more suitable for accounting or bookkeeping than engineering or science. It has the four basic math functions, square root, one memory register, a "tape" printout option, and the ability to return a value to any *AppleWorks* application.

The Calendar shows you any date from 1920 to 1999, and displays two months at a time, along with an Appointment schedule and list of prioritized tasks.

Page Preview gives you a rough picture of how your document will look when printed. About three pages are displayed, side by side, with each letter represented by a black dot on a white background. This looks best on a monochrome monitor.

The Puzzle is the classic scrambled-tile sliding puzzle that can still be found in toy stores.

The Utilities let you set various defaults, load an application into memory, dump an application from memory, rename an application or sort the menu. Loading an application to memory means it does not have to be called from the disk when you wish to access it, but this takes up space on your desktop. If you have a large RAM card, you will probably want to have frequently-used accessories loaded into memory automatically during Startup.

Desktools is a superb example of the programmer's art. Any AppleWorker who does not already enjoy the convenience and productivity of a good set of desk accessories should consider buying it. One or two of these little gems may be worth the entire price of admission. (Beagle Brothers, 6215 Ferris Square, Suite 100, San Diego, CA 92121 (619) 296-6400.)

Deskworks

By: *Jeff Erickson, Kevin Harvey, Mike Hibbets, Tom Hoke, Scott Holdaway, Scott Lindsey, Ian Mitchell and Syd Polk*
Published by: *StyleWare (1987)*
For: *Apple IIGS (512K)*
List Price: *$59.95*
Reviewed by: *Mike Markowitz*

By Apple's "official" definition, a desk accessory is "a program with a relatively limited scope that can be opened while another application is running . . . Some imitate useful objects found on real desktops . . ." such as calculators, note pads, calendars and alarm clocks. In the Apple Desktop (i.e. Macintosh) environment, all desk accessories (DA's) are accessed the same way, by choosing them from the "apple" menu, which is always the first item on the menu bar.

"Classic desk accessories" for the Apple II work by interrupting the normal execution of a program. Some programs allow this, and some don't. Most classic desk accessories are designed as *AppleWorks* enhancements. *Pinpoint* is probably the best-known example. "New desk accessories" for the Apple IIGS work exactly like DAs on the Macintosh. You "install" them by copying them into the System folder of any ProDOS 16 application program—at least that's been the theory. The only desk accessory Apple released with the original IIGS system software was a pop-up digital clock.

StyleWare of Houston, Texas has now released *Deskworks*, a set of eleven new desk accessories for the Apple IIGS. These little programs comple-

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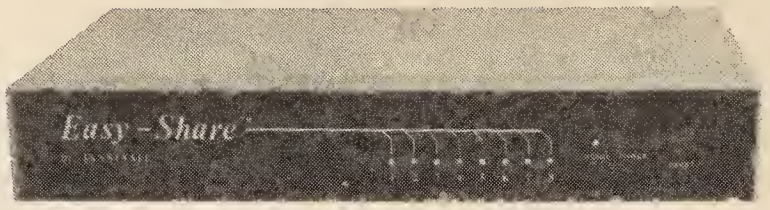

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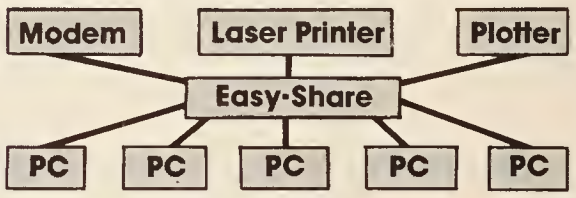

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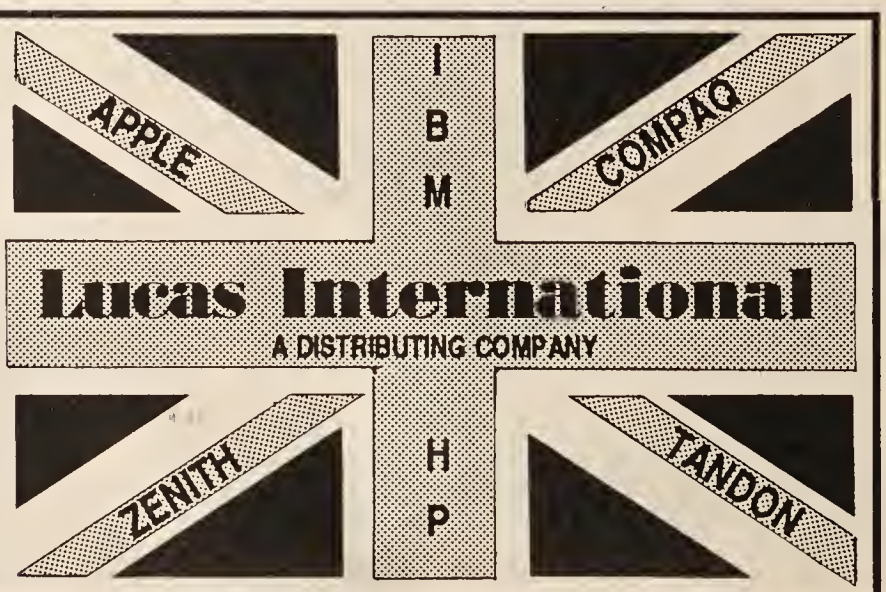

StyleWare DeskWorks™

DeskWorks offers a variety of useful desk accessories to the Apple II user.

ment StyleWare's word processor, *Multiscribe GS*, and graphics program, *TopDraw*, especially well. *Deskworks* operates with both the 320 and 640 graphics modes of the IIGS. For most applications, you may only want to install two or three of these accessories, since they take up disk space you might need to reserve for your own files. Individually the programs are small, but all together they occupy as much as 135K on an 800K disk.

Two of the *Deskworks* programs are pure fun. "Mr. Apple" animates the little multicolored Apple logo at the top left corner of the Menu bar. The colored bands seem to rotate. "Enigma" is a solitaire code-breaking game. It is a clever computer implementation of "Mastermind" (which won the Game of The Year award a few years ago). The computer generates a random pattern of five colored dots, which can be chosen from any of eight colors. You have twelve tries to guess the pattern.

The other *Deskworks* accessories are serious tools. The Calculator emulates a programmable scientific calculator, with seven memory registers, trigonometric functions, logarithms, exponents and a "random" number generator. The calculator display is big enough for quite complex expressions, and many decimal places of precision. There are no statistical functions, however.

The Calendar can display any month between 1935 and 2034. Double-clicking on a date opens an Appointment Book, with fields for every hour from 8 AM to 5 PM, plus "Evening." You can write up to 2000 characters of text into the appointment book, and cut, copy or paste it into other applications.

An Alarm Clock works just the way you would expect, and even has a variable Snooze control. A Phone Filer is based on the metaphor of a Rolodex, but allows for keyword search and automatic dialing (using StyleWare's HyperDialer, a hardware device that connects to the GS speaker port). Owners of *Deskworks* can order the HyperDialer for $14.95 plus shipping and handling.

A Notepad holds up to eight pages of text, with ten lines on each page. A Scrapbook holds blocks of text up to 16K, and graphics (in PICT format) of any size. Graphics can be moved, resized or edited. This is a great convenience when the graphic you want to paste into your document is the wrong size, or needs to be cropped.

Screen Saver blanks out your monitor after a selectable period of inactivity. This preserves the useful life of the phosphor coating. Any mouse movement or keypress will return the screen to normal brightness.

Keymac is a macro utility that lets you store over 100 frequently-used words or phrases and assign them to a particular keystroke or combination. A single macro can be up to 512 characters in length, and multiple macro sets can be saved on a disk.

Finally, there is a Menu Clock that can be copied

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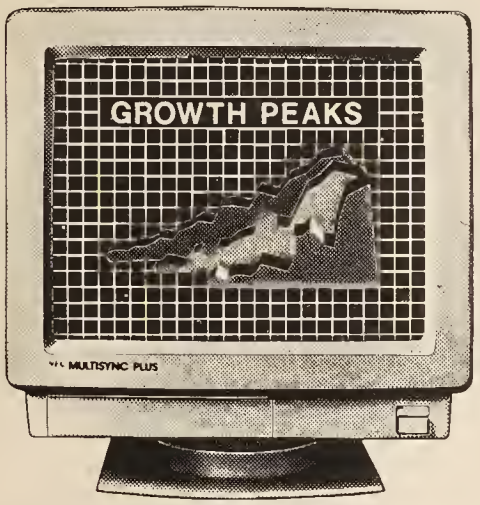

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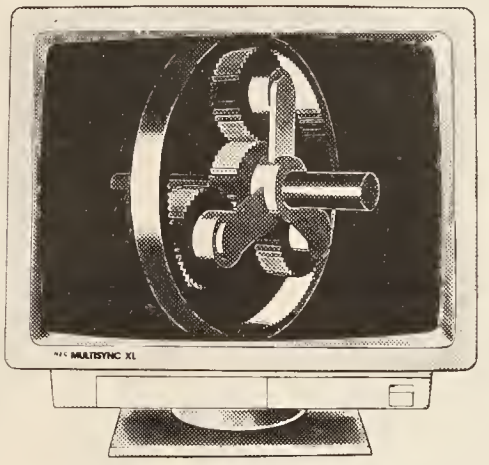

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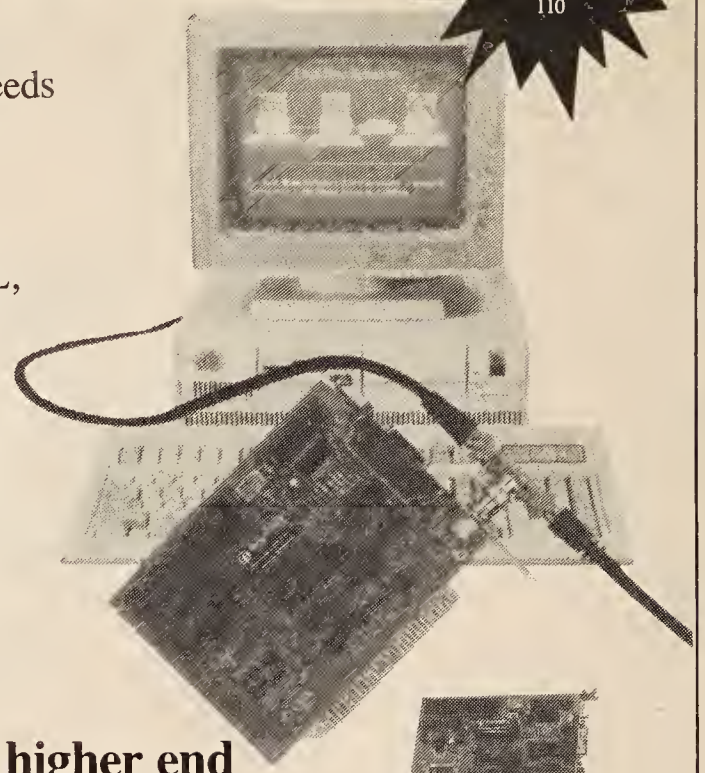

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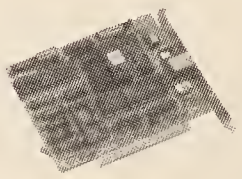

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into the Setup file of the System folder. This causes the current time to be displayed at the top right hand corner of the screen.

A spiral-bound manual is illustrated with screen-dumps (some could be more legible) and gives clear explanations of installation and use. The manual could be improved with better descriptions of technical features and limits of some of the accessories, particularly the calculator.

The programmers at StyleWare have mastered the IIGS in a remarkably short time. The *Deskworks* accessories are written by different people with different styles, but they follow the standard conventions of the Apple Desktop, while adding some creative new ideas. This package is an excellent value, and every serious IIGS user should enjoy it. (StyleWare, 5250 Gulfton, Suite 2E, Houston, Texas 77081 (713) 668-1360.)

GRAPHICS

Print Magic

By: *Jimmy Huey*
Published by: *EPYX (1987)*
For: *Apple IIc/IIe/IIGS (128K)* mouse recommended; supports most popular printers and interface cords
List Price: $59.95
Reviewed by: *Mike Morkowitz*

Print Mogic by Jimmy Huey is a creative tool that lets the user print greeting cards and signs which combine text and graphics. If this description sounds familiar, perhaps you noticed that it also exactly fits *Print Shop*, perhaps the single most successful Apple II software package. *Print Magic* is well-positioned to grab a share of the market that *Print Shop* has dominated for over four years.

To understand why anyone would be crazy enough to design a new program that does much the same things as an existing one, you have to look carefully at the improvements and enhancements that *Print Mogic* offers. For starters, *Print Mogic* is written for 128K of RAM (the original *Print Shop* was squeezed into half that much computer memory). The bigger memory space makes two things possible: A snappy implementation of the Apple Desktop Interface (the "look and feel" of the Macintosh), and much greater graphic detail. *Print Mogic* also gives the user more choices and greater flexibility in arranging a page.

Although the program can be used with either a mouse or the keyboard arrows, most users who have a mouse will find it incomparably easier. The program is quite complex, with several layers of menus, but it never overwhelms the user with too many choices at once. The main menu bar, for example, has only three menus: "Apple," File and Print. Under the "Apple" menu are a set of special utilities, plus a handle for future desk accessories. From the opening screen you have three main options: Page Design, Card Design and Banner Design. Banners can only be printed with text, but cards and pages can be printed with any combination of text, graphics and borders. A *Print Mogic* border is actually only a zone (of variable width) filled with a pattern. You cannot create your own pattern-fills however.

Print Mogic can directly import *Print Shop* graphics. This is a great convenience for users who may have a large collection of graphics in this format, but they look pretty crude alongside *Print Mogic*'s own highly detailed pictures. Clip art graphics from *Newsroom* can also be imported through a powerful file-conversion utility. A Typeface Editor lets you create customized character sets, or import any of the superb Fontrix™ type fonts (published by Data Transforms, Inc.).

There is a very basic "Paint menu" that lets you

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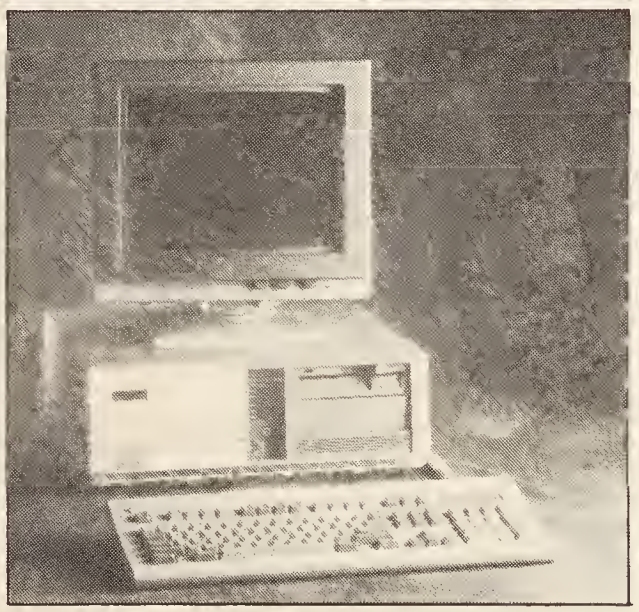

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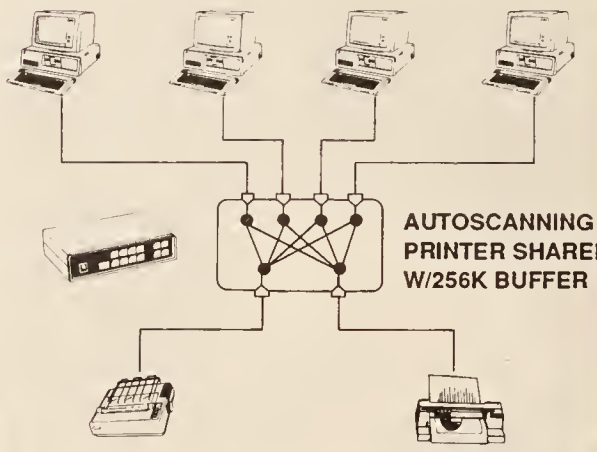

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Print Magic lets you design cards, certificates, and banners for all occasions.

draw freehand pictures with a variety of brush shapes, add boxes or circles and flip, invert or mirror images. You can cut and past any part of a page to a Clipboard.

The program takes up two sides of a 5.25" disk, with another two-sided disk holding 84 graphics and 15 fonts. As a bonus, the package we received also contained a disk with 54 additional "holiday" graphics. The program is not copy-protected — a bold and praiseworthy decision by the publisher.

A thoughtful, consumer-oriented feature of the packaging is a sticker on the box listing every supported printer and interface. Printers include the Epson FX and MX series, the Apple Imagewriter I and II, the C, Itoh Prowriter, 8510, Okidata 92/93, 192/193, Panasonic 1080/1081, 1090/1091 and a few others. Interfaces include the IIc serial, IIGS serial, ALS Printermate, Apple Parallel, Dumpling, Epson APL, Graphicard, Grappler+, Hotlink, Image Perfect, Print-It!, ProGrappler, SeriALL, Super Serial, and TYMAC PPC. The program does not support any kind of color printing on those printers that are capable of it. Configuring the program is a simple matter of selecting a printer and an interface from a list.

Print Magic ran without problems on the Laser 128 with an optical mouse. Unlike some publishers, EPYX has been careful to make their Apple II programs work with Apple clones.

A 45-page manual is well-illustrated with screen shots and examples of graphics. A reference card shows all the graphics and samples of the fonts.

My only criticism of *Print Magic* is that I could not get it to recognize an Apple 3.5" drive. A program this size should include some provision for backup to high-capacity storage devices, now that more and more users are acquiring them.

To stay competitive in this feature-crazed market, future releases of this excellent product should include support for color printing, the ability to edit patterns and some fancier borders. (EPYX, 600 Galveston Drive, Redwood City, CA 94063 (415) 366-0606.)

Timeout Superfonts

By: *Mark Simonsen*
Published by: *Beagle Brothers (1987)*
For: *Apple II* series (requires *AppleWorks* version 2.0 or higher); supports most printers and interfaces; 3.5" drive recommended
List Price: *$79.95*
Reviewed by: *Mike Markowitz*

AppleWorks is not just a program, it's a kind of environment. The huge base of *AppleWorks* users has provided a market for an amazing variety of add-on

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Source: InfoWorld Hardware Benchmark System, as published in InfoWorld May 11, 1987.

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On The Firing Line

WordStar 2000 Plus: The Swiss Army Knife Of Word Processors

By Stephan Wickham
and the Diamond Software Technical Team

Times are better at MicroPro with Leon Williams in command. We are finally seeing some innovation in the old *WordStar* and *WordStar 2000 Plus* products. I have come to regard these word processors in the same good light as a trusted vintage Chevy truck — many of us have come to rely on the MicroPro word processors through years of hard use.

MicroPro now brings us a brand new edition of *WordStar 2000 Plus*. This word processor has an amazing 400 new features, which flattens most of the competition. This may very well be the Swiss Army knife of word processors.

The new *WordStar 2000 Plus* is a speed demon, which should open the eyes of users familiar only with the original *WordStar 2000*. *WordStar 2000 Plus* can now jump from the front to the back of a 100-page document in less than a second on a typical IBM AT. Scrolling is so fast that MicroPro has even included a way to slow it down. Cruise Control is now a built-in feature. You can use it to adjust the cursor speed from 10 to 240 characters per second. EMS memory is supported and speeds reformatting, scrolling, block operations and saving.

WordStar 2000 Plus Release 3 is now available in two single user versions: Personal and Legal Editions. Many of the new enhancements to *WordStar 2000 Plus* are provided by the addition of *PC-Outline* from Brown Bag Software, *Showtext* from TimeWare Corporation and *Fill-A-Form* from Athena Software. Also included is *Roget's II Thesaurus,* which has 500,000 synonyms and 40,000 cross-referenced key words with definitions. *The American Heritage Dictionary* contains an 87,000 word spelling corrector with phonetic look-up. Specialized legal, medical and financial dictionaries are available separately.

WordStar 2000 can also tie into Lotus spreadsheets and update figures in the document. Files can be imported or exported in many different formats including *WordPerfect, Microsoft Word, MultiMate* and *Displaywrite*. Most of the print attributes such as boldface, italic and centering are retained. Other word processors can move files from one format to another, but usually at the expense of losing the file format.

MicroPro is one of the few companies in the industry to focus heavily on printer support. *WordStar 2000 Plus* has printer drivers that work with over 400 different printers. Users of H-P LaserJets will be very impressed with a new built-in high powered tool called HPFONT. This utility will make *WordStar 2000 Plus* printer driver sets from combinations of cartridges, laser internal fonts and downloadable soft fonts. The program provides a font menu system that displays complete information about the font when the cursor is positioned on the file name. The displayed information shows point size, print attributes (such as bold or italic), type size and file size. The file size parameter is especially important to laser printer users, due to the need to calculate the amount of available memory in the laser printer. The HPFONT utility creates a batch file to download any soft fonts. A total of 36 fonts can be used within one printer driver set, and all 36 fonts can be used together.

Users with more powerful PostScript laser printers can take advantage of the PSFONT module that provides a menu system that controls the font name, point size and the leading. *WordStar 2000* does a superb job of printing proportional fonts, much better, in fact, than word processors from *WordPerfect* and Ashton-Tate's *MultiMate*. Even with a dot matrix printer, *WordStar 2000 Plus* is able to perform microjustification of the line.

Graphics incorporation is made possible through a modified version of Inset Systems' *Inset* utility. This makes it possible to position imported graphs and illustrations anywhere on the page, with *WordStar 2000* automatically flowing the text around it. On the standalone *Inset* package, users must manually control the text flow. The graphics module can automatically import scanned images or capture screen snapshots from within most programs. Images brought into the program can be sized, cropped and rotated. The finished graphic can then be previewed in full color on screen and then printed out on a color or black and white output device. Some premade drawings are included in a library to get you started. For users who have a requirement to print title pages, signs or overhead presentation material, there is the *ShowText* utility. This easy-to-operate utility can print characters up to three inches in height. MicroPro has provided 30 or so premade formats that allow you to just input data into cells and then preview the *ShowText* image.

The *PC-Outline* module can be made memory resident and can be controlled to pop up on command. It is an excellent tool for organizing thoughts, displaying to-do lists or providing an outline structure for a document. An outline can be imported directly into a document. The communications module is based on a script language and comes configured for popular remote services, such as CompuServe. Users can easily write their own scripts. Documents produced in *WordStar 2000 Plus* can also be transported via modem without leaving the program or having to manually convert the text from 2000 format to ASCII.

Added now is a document history screen that can keep track of the author's name, the complete title and comments. The program automatically adds the original creation date, the date of last edit, the total number of characters and the number of characters added in the last edit. A word count can be requested at any time by pressing CTRL-O and pressing =. This also shows the total number of lines and pages. A breakdown of the average length of the words in a document is displayed if a word count is called at the same time the history screen is displayed.

Users can now display bold and italic on a color monitor as separate colors, rather than the old method of a single color. Fourteen elements can be assigned a unique color, with the proper monitor. Release 3.0 of *WordStar 2000 Plus* has been optimized for speed. The program is up to ten times faster than Release 2.0 on many of the functions.

Document location is a snap with the *FileLocator* feature. Any document can be located through key word or phrase matching. *Fill-a-Form* provides a method of entering form specifications onscreen and storing them for future use. From then on, you can call up the form and easily enter the data. There is no need to use a typewriter to fill out your forms when you use *Fill-a-Form.*

Mailing lists can be created and sorted using *MailMerge*. Included is easy onscreen record fill-in. *WordStar* was one of the first companies to have this feature and *MailMerge* is still one of the best.

The Legal Edition does not include *PC-Outline* or *ShowText.* It is possible to add these features at $59 for *PC-Outline* and $109 for *ShowText.* The Legal Edition has two very necessary utilities. *CompareRite* will compare two documents and display the differences in a new third document. Based on the Harvard Bluebook, *CiteRite* will read your citation entries, check each one for correctness and completeness against the Harvard standard. A typical citation takes only three seconds to check. All errors are flagged and cross referenced to the Bluebook. A California version checks for special formatting requirements unique to the state. *CiteRite* has the distinction of being the first program to be issued a Certificate of Assurance from the *Harvard Law Review*. The 93,000 word dictionary contains many terms unique to the legal profession.

Telecommunications to Westlaw, Lexis, Veralex, ABA Net and others is possible through the *WordStar 2000 Plus* communications module. Line and paragraph numbers are done the right way, with line numbers set independently of line spacing. Line numbers can provide easy reference within briefs, contracts and pleadings.

Included with every copy of *WordStar Legal Edition* is a book written by a team of attorneys, *The Lawyer's Guide to WordStar Legal Edition.*

Both versions of *WordStar 2000 Plus* include many learning aids. A manual takes you through a series of lessons with step-by-step instructions. The practical examples have you create newsletters, contracts and television scripts. There are also on-line tutorials that set a standard for the industry. If all this isn't enough, it is possible to purchase a video tape for $29. MicroPro breaks new ground with their free 800 number for technical support — it's available seven days a week.

It is not possible to explain all the tools available in the new *WordStar 2000 Plus* in this short space. We would be surprised if these new word processors don't provide all the features needed in document production. These programs are so advanced that MicroPro has coined a new word for them — "word publisher." We are happy to say that they have succeeded in producing word processors that are a new generation.

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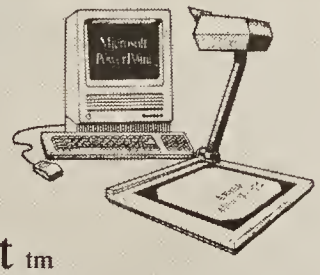

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products that patch, modify or enhance Robert Lissner's original program. Desk accessories, spell checkers, macro utilities, graphics packages, and a bewildering array of other tools compete for disk space, computer memory and the dollars of AppleWorkers.

A new generation of Apple II word processors (such as *Multiscribe*) offer something *AppleWorks* can't easily provide—multiple fonts and type sizes in a document. Apple II users think they want this capability because their Macintosh owning friends have it, and they tend, understandably, to sneer at those who lack it . . .

Timeout Superfonts is a complete set of Macintosh-style fonts that can be used from inside *AppleWorks*. The list includes:

Athens 18
Cairo 18
Chicago 12
Courier 9, 10, 12, 14, 18, 24
Geneva 9, 10, 12, 14, 18, 20, 24
Helvetica 9, 10, 12, 14, 18, 24
London 18
Los Angeles 12, 24
Mobile 18
Monaco 9, 12
New York 10, 12, 14, 18, 20, 24
San Francisco 18
Symbol 9, 12, 14, 18, 20, 24
Times 9, 10, 12, 18, 24
Venice 14

The fonts are provided on a 3.5" disk, and also on two sides of a 5.25" disk (which lacks the Helvetica and Times font sets). *Superfonts* is one of seven *AppleWorks* enhancements in Beagle Bros. *Timeout* series. These programs all work in a similar way. Once they are installed they "pop up" on a special menu when you press the <Open-Apple> and <Escape> keys together. They also display their own title screen when you first boot *AppleWorks*. To print using *Superfonts* you have to insert special "Load Font" commands into the text of your document. These commands must all be at the very beginning of a file, and each must be on a separate line.

Any font can be modified with italic, outline, shadow or inverse (white-on-black) attributes, using special commands inserted in the text of your document. *Superfonts* is compatible with most of the Printer Options in the *AppleWorks* word processor. This is far from the convenience and immediacy of What You See Is What You Get, but you can preview how your page will look by printing "to the screen" rather than paper.

Superfonts also has simple Load Picture and Put Picture commands that allow you to insert Hi-Res and Double Hi-Res graphics into an *AppleWorks* word processor document. The number and size of the graphics may be limited by the computer's available RAM.

A 56-page manual has an index and illustrations, but lacks good samples of how the fonts look on paper. This may be too printer-dependent. The Cairo font, a set of cute little symbols, at least should have a keyboard map — otherwise it's almost impossible to use. On the ImageWriter II the fonts look very sharp. A large number of printers and interface cards are supported.

Superfonts is not cheap, but it represents a very good value for users who want to use multiple fonts and type styles without giving up the familiar *AppleWorks* environment. Combined with some of the other *Timeout* programs (*Quickspell*, *Graph*, *Ultramacros*, *Sidespread*, *Filemaster* and *Desktools*) it gives good old *AppleWorks* another competitive advantage in a crowded and turbulent market. (Beagle Brothers, 6215 Ferris Square, Suite 100, San Diego, CA 92121 (619) 296-6400.)

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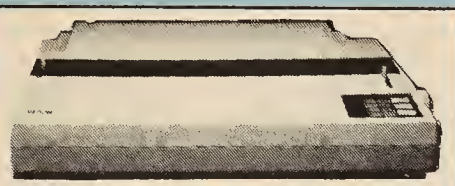

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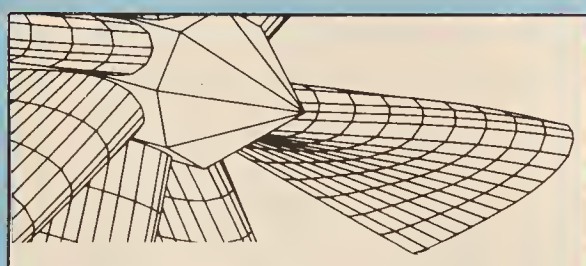

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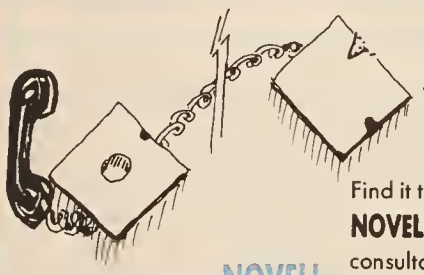

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DATA BASE MANAGERS

Softwood GS File

By *Woody Williams, Mike Barnick and Terrance Wright*
Published by: *SoftWood Co. (1987)*
For: *Apple IIGS (512K)*
List Price: $99.95
Reviewed by: *Mike Markowitz*

Considering the inordinate amount of attention that database programs receive in the literature of personal computing, the number of human problems that they are actually able to solve is quite small. Most human problems involve money, or getting along with other people. Computer printers, alas, cannot output anything acceptable as currency, and most software gets along with people even worse than other people do. I cannot remember the last time I had a problem that required for its solution the sorting and cross-indexing of hundreds or thousands of records. If I ever do, however, I'm glad I have *Softwood GS File*.

Softwood is a little company in Santa Barbara, and this is its first package for the GS. I hope it will not be its last.

GS File is still the only database program specifically written for the Apple IIGS. Unlike many IIGS programs, it does not make unnecessary noises to show off the capabilities of the Ensoniq synthesizer chip, and it does not use the most garish 16 colors that can be selected from a palette of 4096.

The program requires 512K of RAM, which is what most new IIGS owners buy. It can easily take advantage of more memory, since the entire database is kept in RAM while the program is active. This means that most operations are performed at electronic speed, and do not require disk input/output, which is painfully sluggish on the IIGS. The maximum size of a database (the number of rows and columns) depends on how much memory is available when the program is started. This product is not a relational database, that is, you can only work with one file at a time.

Like *AppleWorks*, and many similar applications, *GS File* toggles between "list" and "form" screen displays. In list format, your data is displayed in rows and columns. In "form" format, each record is shown as a set of *fields*. If you are a statistician for a baseball team, each player is a record, and his season's runs, hits, errors, arrests and convictions would each be separate fields.

In the "list" display, your screen window is only 12 lines tall and 9 or 10 columns wide, but you can easily scroll in any direction with the mouse.

GS File allows up to 32 fields per record (*AppleWorks* allows only 30). When you define a field you can also assign a data type, such as text, amount, date, phone number, yes/no, etc. (The default is "text.") *GS File* uses the data type to verify that the data you enter is valid; a nice bit of error-trapping.

The program can create new fields by doing simple calculations on data in existing fields. There are powerful sorting and selection tools built into the program. "Selection by example" lets you search out only those records that include (or exclude) specific information — like the set of all clients named Smith. "Selection by range" could be used to pull out the set of all clients with incomes between $40,000 and $60,000.

GS File is ideal for mailing list management, since it can be used to print mailing labels very easily. A built-in utility allows users to import *AppleWorks* database files, or plain ASCII files if they are properly delimited. *GS File* databases can also be

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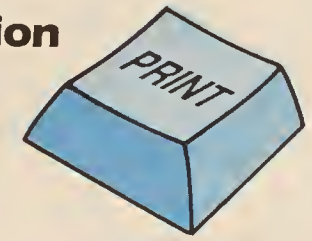

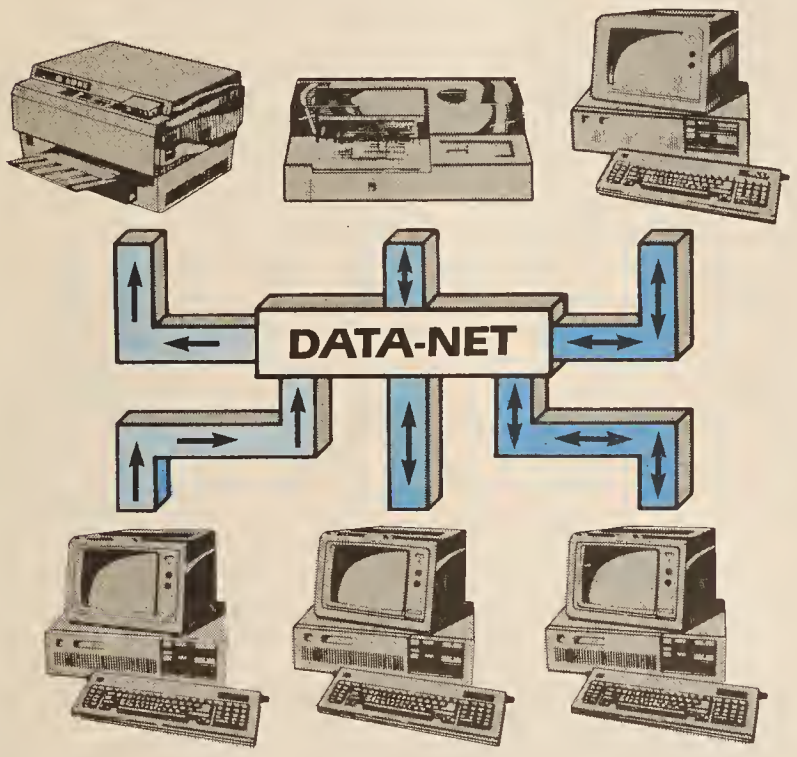

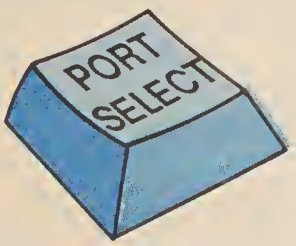

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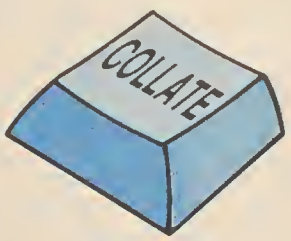

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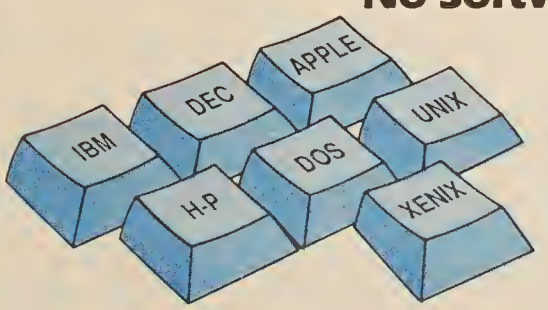

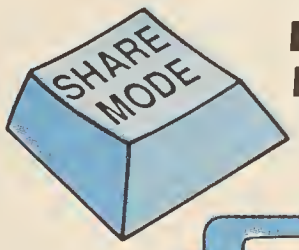

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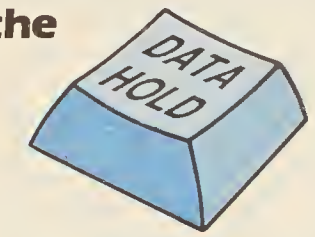

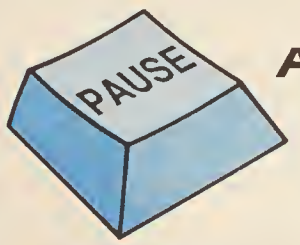

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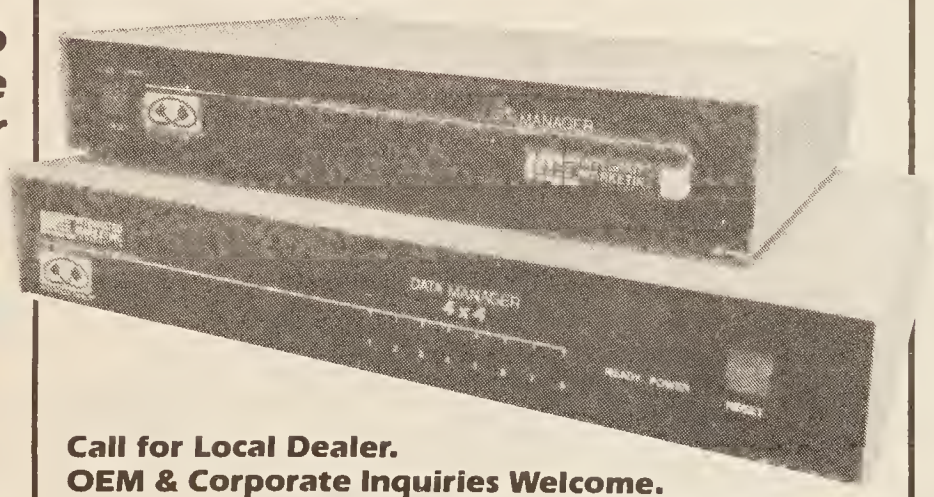

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saved as ASCII files, for import into word processors (for example).

The programmers followed Apple's human interface guidelines meticulously. You can use the mouse to move and resize the data fields on the "form" screen or the columns on the "list" screen.

There are some thoughtful helps for the user provided in the menu bar. For example, you can always check how much free memory you have by clicking on "Memory Usage," which pops up a dialog box with a message like "RAM Reserved For File: 807K." The System Status option returns your current file name, the free space on your disk and a simple yes/no answer to the question "will my file fit on this disk?"

A 70-page spiral-bound manual is clearly organized and well-illustrated with screen shots. A sample database of 100 homes from a fictitious real-estate company is provided for practice on the program disk.

Apple sees home-based businesses as a major potential market for the IIGS, and *Softwood GS File* is very well-positioned for this sort of application. (SoftWood Company, P.O. Box 90331, Santa Barbara, CA 93190-0331, 805/966-4662.)

SPREADSHEETS

ALS 18C Financial Consultant

Published by: *Advanced Logic Systems, Inc.*
For: *MS-DOS*
List Price: *$89.00*
Reviewed by: *Wayne A. Yacco*

About 1972 or 3, Hewlett-Packard came out with its first financial calculator, the HP 80. I was one of the early owners of that machine. It cost over $400 with a couple of accessories but it was an incredibly powerful machine for its time. There were functions that would let me solve for any variable in an annuity calculation: payment periods, interest rate, payments, present values or future values. Other functions were provided for trend lines, depreciation, day/date, security yields, summations, averages, variances and standard deviations. Aside from programming, it represented the epitome of personal computing for the business user.

I used it in finance courses, for calculating mortgages and auto loans, and evaluating investment alternatives. By the time it died of old age, my HP 80 had been superseded by a newer, more powerful HP 18C.

One thing kept me from buying the 18C, though just barely. Buying a $100 calculator seems like a poor investment during the days of $300 business computers. Besides, I already have an IBM AT and several compatibles in my office. It seemed that there must be a microcomputer investment program somewhere with at least the functions of an old financial calculator.

Finally I found ALS's *18C Financial Consultant*. It offers all the additional features of the 18C. It adds a fully powered scientific calculator, metric conversions, and new investment-analysis functions.

There are four programs on the distribution diskette supplied by Advanced Logic Systems. The *ALS 18C* can be installed in both memory resident and terminate-and-stay-resident (TSR) versions. Besides the normal RPN versions of the program, there are also versions within each version with standard algebraic notation.

I loaded the memory resident version. Typing a K invoked the discounted-cash-flow screen. I had expected the layout of the screen to somehow resemble the HP keyboard layout. This was different. Closer inspection revealed that there were some missing keys (entire entry fields actually).

The manual covers each function, but it is not a financial tutorial. If the user knows what needs to be done, it should be possible to follow these instructions successfully.

This program does have the same features as an HP calculator, but it presents them differently. The functions are arranged by application. Instead of generic keys which must be given meaning depending on the application, the entry fields are prelabeled according to the application. The way they are used is also somewhat fixed depending on the application.

For example, one application is called Savings. In that application the future value of a cash flow is calculated by entry fields labeled for the specific application. Loan amortization and investment analysis are other versions of the same algorithm. The amortization application has specific field labels, but is otherwise capable of performing all of the desired calculations for any of the applications. It will solve for any of the variables. It will also display or print a table of all values for the entire loan period.

There are also applications which were not available on the old model 80. The HP 80 could only perform calculations where payments were equal for each period. *ALS18C* allows the user to enter a different value for each period.

The model 80's trend-line function is missing from the *ALS-18C*. This is a disappointment. This program could easily have incorporated not just a simple trend line but full regression analysis including the beta coefficient.

The only statistical functions which are provided are the mean and standard error. Formulas are provided in an appendix. This function could easily have included a graphic display of a uniform

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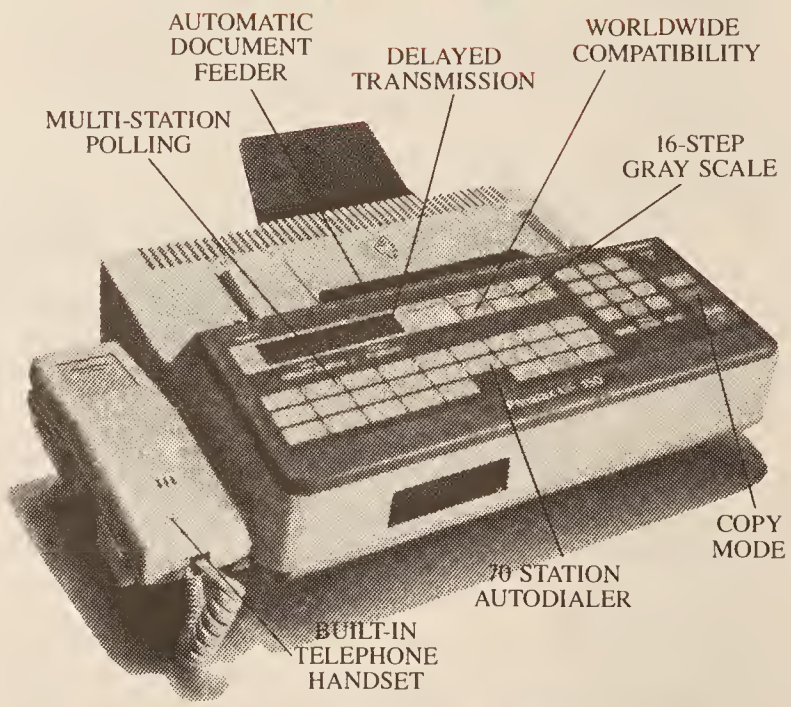

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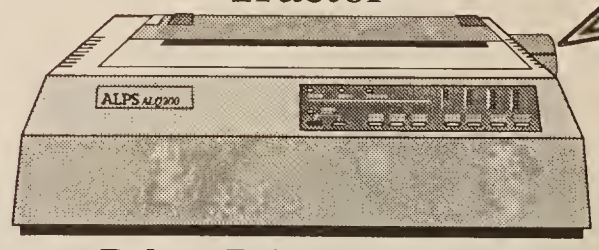

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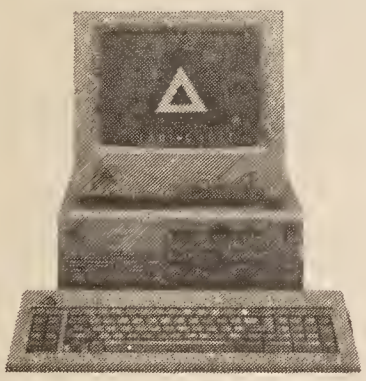

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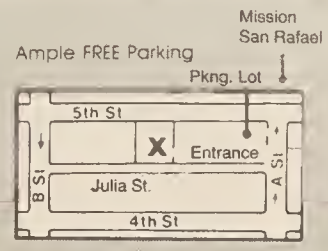

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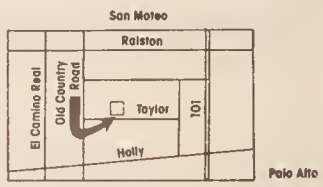

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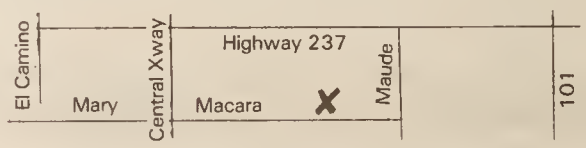

distribution with alpha and beta regions, confidence intervals, etc. The old calculator had more comprehensive statistical functions than this program.

In conclusion: This implementation of the HP Financial Consultant offers ready-made applications to the novice while still providing the knowledgeable user with nearly full analytical capabilities. The statistical function is practically useless, but other financial functions are present. Real estate, IRA, break even, and lease applications are defined. This is much easier than developing each application using only the basic cash-flow algorithm.

The *ALS18C* is powerful enough to perform just about any simple to moderately complex financial calculation. There is far more capability for performing scientific calculations than necessary. However, as a result of its lack of statistical sophistication, it would not be optimal for complex portfolio analysis involving diversification of risk. A good product, despite the limitations, and very well (but not perfectly) suited to its intended applications. (Advanced Logic Systems, Inc., 1283 Reamwood Avenue, Sunnyvale, CA 94089 (408) 747-1988.)

HARDWARE & PERIPHERALS

System Saver IIGS

A cooling fan and surge suppressor for the Apple IIGS

List Price: $99.95
Reviewed by: *Mike Markowitz*

"Flabelliphobia" (a word I just invented) is a morbid revulsion toward computer cooling fans. The syndrome is quite rare, being confined mainly to Apple design engineers influenced by The Great Flabelliphobe, Steve Jobs. Those afflicted believe that natural convective circulation should be sufficient to cool any well-designed computer.

Fear of Fanning has two aspects. From the user's viewpoint, the great drawback of a computer cooling fan is the noise it generates. From the design engineer's viewpoint, however, the dreaded noise that emanates from a fan is electronic, not auditory. Even a tiny motor in such close proximity to sensitive chips and circuits emits electromagnetic noise that threatens the integrity of data.

What's the big deal about heat anyhow? There are two main sources of heat inside a typical personal computer. One is the "power supply" which converts the powerful flow of alternating current from your wall socket into the precise trickles of direct current the computer needs. In the process, which can never be 100% efficient, a good bit of energy is thrown away in the form of heat. Can you say "entropy"?

The other source of heat is the chips and circuits themselves. Until we have desktop superconductors, micro-circuits will continue to get warm, whether they are doing any thinking or not, because of their intrinsic resistance to the flow of electricity. Actually, unless we are talking meltdown temperatures, it isn't the heat itself that kills chips, it's the thermal cycling. Things expand when they warm up and contract when they cool down. Expand, contract, expand, contract ... Do that often enough and those intricate microscopic structures start to take a beating.

The Apple IIGS was designed without any cooling fan, but even Apple realized that if you put more than about three typical cards in the slots it could get pretty toasty inside that stylish gray box. Apple therefore offers an optional $49 internal fan that clips onto the power supply and plugs into a special power connector on the motherboard.

But if you want to go first class, there's the System Saver IIGS from Kensington Microware

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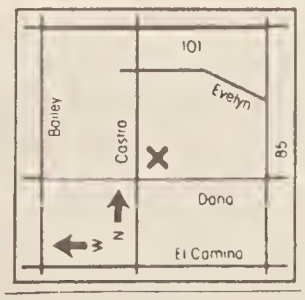

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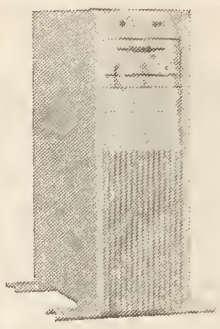

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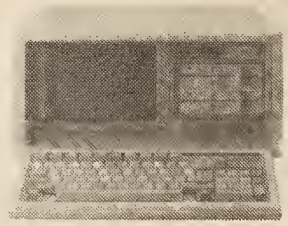

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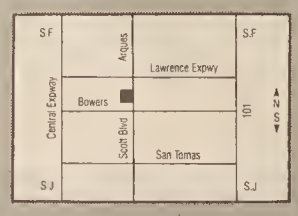

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Ltd. These are the folks who made the original System Saver, a little clip-on box used by over a quarter of a million Apple II+ and IIe owners. For the IIGS, the System Saver combines a fan, a surge suppressor and four electrical power outlets controlled by two switches.

In design the System Saver IIGS precisely matches the dimensions, color, texture and style of the IIGS itself. The two switches (AUX and MASTER) are transparent diagonals that light up in the same comforting shade of green as the power indicators on the GS and its RGB Monitor. The AUX switch is for your printer and any other device such as a modem. The Master switch is for the computer and monitor.

You put the System Saver on top of the IIGS, where it slots itself precisely into place. A polyurethane foam gasket makes a tight seal against the top of the computer. You stack the monitor atop the System Saver, where it benefits from the extra two inches of height. (If the center of your screen is at eye-level, there's less strain and fatigue on your neck muscles.)

The System Saver fan is truly quiet. The sound is more of a low hum than a high-pitched whine. It moves an impressive 17 cubic feet of air per minute through the computer. Air is sucked in through holes in the bottom of the GS, and any space you may have left open for cables on the back of the computer. The exhaust on the left side of the unit is not enough to rustle paper.

This is not the ideal fan for you if your computer lives in a dusty environment. Some authorities believe that dust sucked into a computer and deposited evenly across all components can be as harmful as heat. The best solution is a fan that forces filtered air through the system, with some provision for periodic filter-cleaning.

Surge suppression is a more controversial topic. I've never met anyone who actually lost data or suffered damaged hardware from power surges or spikes, but like a lightning rod on the barn, it's comforting to know you have protection in place . . . A recent article in *Science News* (Dec. 12, 1987) noted that "the quality of the electricity being delivered to consumers seems to be declining . . . instances of flickering lights and brownouts are much more common now than a few years ago." The IIGS System Saver conforms to the applicable specification (587-1980) of the Institute of Electrical and Electronic Engineers. Here are the other technical specs:

rated voltage	120 v AC
rated current	10 amps
temperature range	0 to 55° C.
test voltage	1750 v DC for 1 second
max. average power dissipation	1.5 kW at 1 millisecond
clamping voltage	340 v
current peak	6500 amps
energy rating	210 joules
typical response time	<1 picosecond
noise rejection frequency	600 kHz to 25 MHz
attenuation	47 dB

While I don't pretend to understand all the implications of these numbers, I compared them with the spec sheet for my fancy $159 line conditioner, and they were roughly equivalent. The System Saver IIGS has a push-to-reset 10 amp circuit breaker, and if the protective circuitry ever fails, the master power switch will not light up.

The product carries a one-year warranty.

The System Saver IIGS is a handsome and well-engineered enhancement to any desktop that is fortunate enough to be the home of an Apple IIGS. Although the list price looks steep, I've already seen some mail order houses and clubs offering substantial discounts.

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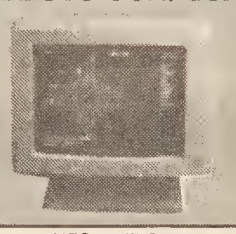

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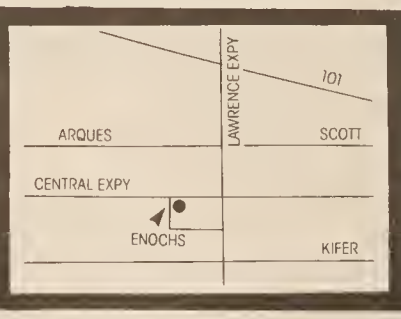

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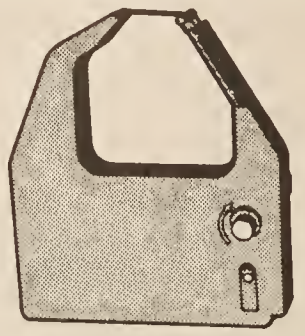

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WORD PROCESSORS

WordPerfect For The Apple IIGS Version 2.0

Published by: *WordPerfect (1987)*
For: *Apple IIGS (512K, one or two 3.5" drives)*
List Price: *$179.00*
Reviewed by: *Mike Markowitz*

With this new version, *WordPerfect* for the Apple IIGS combines the rich array of features that have made it a well-loved MS-DOS standard with the point-and-click convenience of the Apple Desktop. The result is one of the best word processors I have ever seen for any computer.

The sheer size of the package is enough to intimidate a novice user. There is a program disk, a utilities disk and a dictionary/thesaurus disk. Two 3.5" drives or a hard disk are recommended.

This is the first IIGS program that absolutely requires the upgraded (version 01) ROM chip. If you still have the original ROM, the program crashes while loading, with the message: 0110 TOOL MISSING OR INCOMPATIBLE.

According to one of *WordPerfect*'s tech support people, the decision was made to go with the new ROM to overcome some bugs that involved losing the cursor on one window when it was overlaid by another window. Since the upgrade is free at any authorized Apple dealer, there is no cause for complaint (except perhaps for owners of non-Apple 5.25" drives, which don't seem to work reliably with the new ROM).

During its astonishingly protracted loading time, the program entertains the user with a beautiful super hi-res picture. Rather than the usual *WordPerfect* blank sheet of paper, the program now opens up onto a regular Apple desktop, with menu bar and an untitled document ready to write. You can have multiple document windows open on the desktop, and you can move and resize them with the mouse. The Dictionary/Spell Checker (115,000 words!) and Thesaurus (10,000 headwords) together take up 650K on a disk of their own.

Unlike other word processors for the IIGS, *WordPerfect* dispenses with fancy fonts, decorator colors and paste-in graphics, concentrating instead on the functional tools that a professional writer really needs. I rarely have a need for headings in 42-point Venice italic bold, but I have to type the date on every letter I write. In *WordPerfect* you can type the current date automatically (including the time, if you wish!) in any desired format by pulling down the "Special" menu and selecting "Insert Date." You have full control over the text and background colors, and you can assign different colors for bold and inverse-bold text.

The Quick Reference card lists 126 commands or features. Forty-three of these are executed by keystroke combinations, as well as menu selection. The built-in Macro feature and the variety of Footnote options are particularly useful.

Most new users of *WordPerfect* for the IIGS will be making a transition from *AppleWorks*, *AppleWriter* or some other 8-bit application. The program can import ASCII text files directly, and provides utilities (on a separate disk) to convert many other file formats (as long as they are on a ProDOS disk).

The program is packaged in a handsome "IBM-style" cloth-bound slipcase that nearly matches the color of the IIGS. The three-ring manual runs to over 500 pages, including an excellent tutorial, re-

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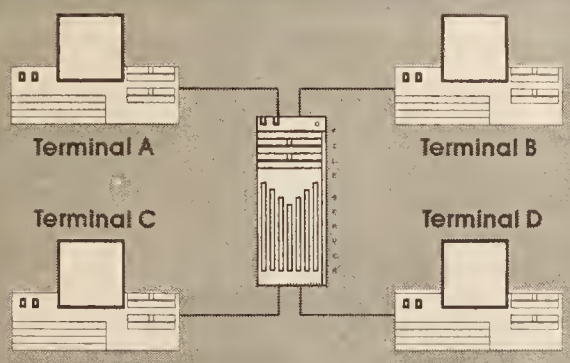

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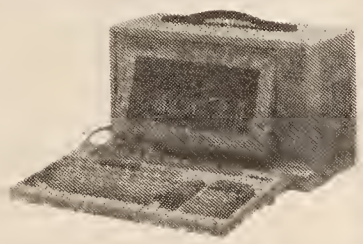

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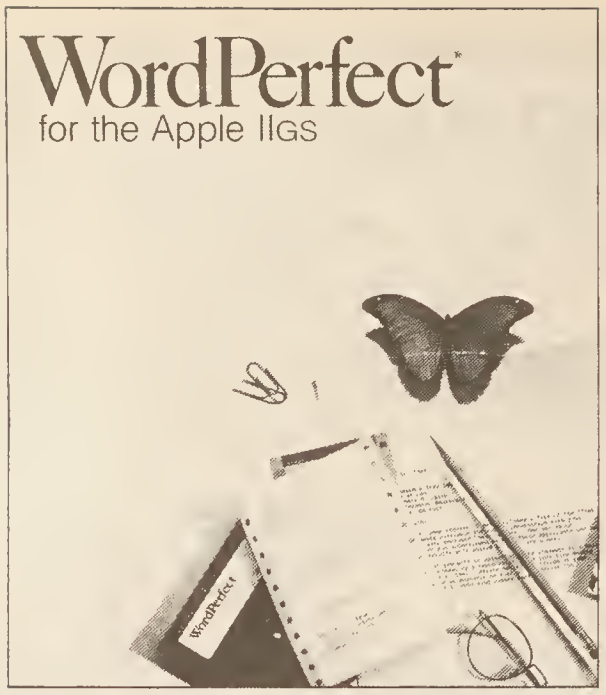

WordPerfect for the IIGS offers unprecedented power and features in an Apple II word processor.

ference section, installation guide, glossary and index. The manual has been completely re-written for the IIGS version (The version 1.1 documentation was simply an addendum to the manual for the 8-bit Apple II *WordPerfect*).

A great variety of non-Apple printers, sheet feeders and interface cards are supported. This is a welcome improvement over the general run of IIGS software, which often limits the user to an ImageWriter or nothing.

WordPerfect is a model of clarity and accessibility, but potential buyers should understand that this is a powerful, complex program that requires some diligent study and practice to master. The documentation assumes you have a good knowledge of ProDOS pathnames and conventions, for example. Toll-free technical support, widely regarded as the best in the industry, is available to registered owners. The program is not copy-protected, which is a great convenience for hard disk owners.

If Apple provides IIGS support for its new, lower cost laser printer, then a product like *WordPerfect* for the IIGS could become an increasingly attractive option for many professional and academic writers who work at home. Despite the relatively high price, this program is an excellent value. (WordPerfect Corporation, 288 W. Center Street, Orem, UT 84057 801/225-5000.)

RECREATIONAL/ EDUCATIONAL

Winter Games

Published by: *EPYX*
For: *Apple IIGS (512K)* requires 3.5" disk drive; *joystick and color monitor recommended*
List Price: $39.95
Reviewed by: *Mike Markowitz*

With the Winter Olympics in Calgary, this is a very timely new version of an arcade classic. Versions for the Amiga, the Apple II, the Atari ST, Commodore 64/128, IBM PC and Macintosh already exist, but this conversion for the Apple IIGS shows off the graphics, sound and power of the computer most impressively.

Since IIGS programs take up a lot of disk space, only six events are included in *Winter Games:* Ski Jump, Bobsled, Figure Skating, Hot Dog Aerials, Freestyle Skating and Biathlon. The event that got left out is speed skating, which is found in some of the other versions.

I've been using an old Kraft joystick plugged into the 16-pin game port on the motherboard of the GS. For some reason, the EPYX games don't recognize a joystick at this location, and would only allow keyboard input, which greatly diminishes the player's enjoyment of some events. When I rigged an adapter to the 9-pin game port on the back of the GS, the joystick worked just fine.

The ski jump event shows a large-scale view of the ramp against a mountain landscape. When you leave the jump, you also have a small inset view of your skier. You move the joystick to keep the skier in balance until you land. If you get out of balance, you crash.

Bobsledding shows you a map of the track, with a rear view of your sled. As you hurtle down the track you use the joystick to steer. This is a tricky event, since the steering input is "reversed." If your timing is off, your sled falls over.

The skating events use joystick movements to select various maneuvers. The emphasis is on style and grace — you lose points if everything isn't done smoothly. Hot dog aerials are acrobatic moves performed during a ski jump.

Biathlon was my favorite event in *Winter Games*. This is a peculiar combination of cross country skiing and target shooting. You are racing against the clock. You skier moves across a series of beautiful winter landscapes, with a pulse-rate indicator ticking off your level of effort. When targets are presented, your pulse rate affects your aim. You can wait for your heartbeat to slow down, giving you a steadier shot, or rush along trying to get hits despite the bouncing crosshairs.

As in the other Olympic simulations from EPYX, the flags, national anthems, medals, World records

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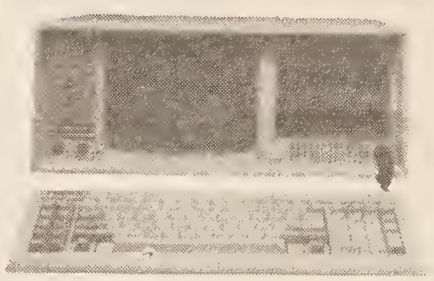

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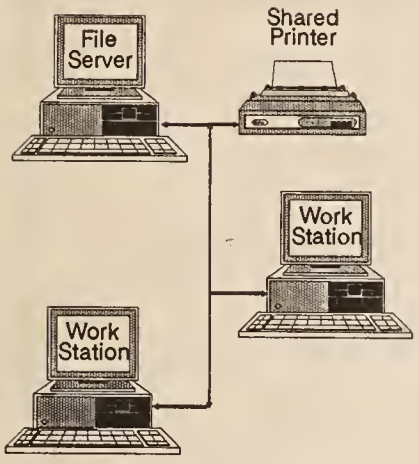

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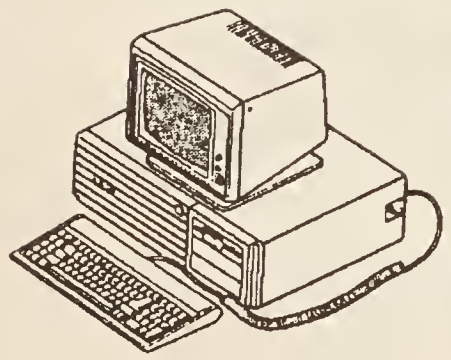

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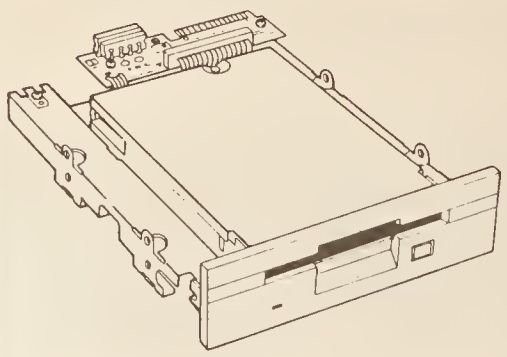

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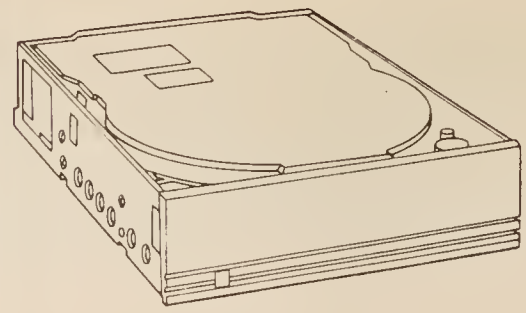

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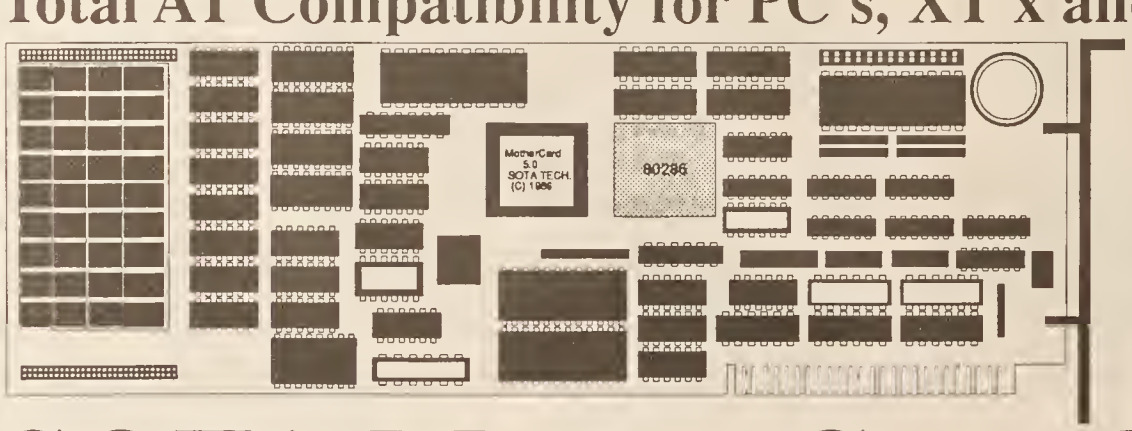

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and other trappings of sport are handled in a colorful and creative way. You get to pick a nationality, and the program records your name. This is definitely a game that can be enjoyed by several players taking turns. It deserves a high-quality joystick. Some players may regret the lack of any support for the Apple mouse, but mousing around seems to involve a very different set of psychomotor skills than conventional joystickery. EPYX rates this game as two parts action, one part strategy. This is perhaps a bit optimistic on the strategy side, but for players who enjoy action, *Winter Games* is highly recommended. Considering that this reviewer generally hates sports, that may be high praise indeed. (EPYX, 600 Galveston Drive, Redwood City, CA 94063.)

The Sesame Street Crayon

"Numbers Count"
"Opposites Attract"
"Letters for You"

By: *Brian A Rice*
Published by: *Polarware (1987)*
For: *Apple II series (128K)*
List Price: *$14.95 each*
Reviewed by: *Mike Markowitz*

There aren't a whole lot of interesting things a preschool person can do with a computer (at least not without an older user hovering around to help). One very simple, fun activity is to use the computer as a coloring book. This might not have the same immediate, direct hands-on-media involvement as a traditional coloring book, but any parent can appreciate that electrons (unlike wax crayons) cannot be crushed into the carpeting . . .

Flood-fill is a simple graphics programming trick, but still one that seems magical. You click on a color from a palette then click on any enclosed area, and that area is flooded with the color, or pattern you selected. Polarware, a company that knows every Apple graphics programming trick in the book, has teamed up with the Children's Television Workshop to create some delightful coloring-book software. The Apple II version is reviewed here; there is also an IBM PC version we have not seen yet.

There are three titles in the series: "Numbers Count," "Opposites Attract" and "Letters for You." They feature Big Bird, Cookie Monster, Grover, Bert and Ernie along with other characters in big, bold images that are, for the most part, easy to color in. This can be a tricky design problem, since the artist has to avoid enclosed areas that are too small, and design big areas that "leak" properly so they will fill with one click. The black outlines that define each picture are "protected" somehow so that they cannot be changed to another color or erased. Each of the packages in the series credits a different artist, so there are some subtle stylistic differences.

The Sesame Street Crayon can be used with a mouse, joystick, Koala Pad or the keyboard for input. Color graphics can be printed on the ImageWriter II or Apple Scribe with a color ribbon. The program uses one color, magenta, that seems to defeat the color-mapping of the ImageWriter II —it comes out as a shade of gray. Once the program is set up (with the usual menu selections to specify your input device, printer and interface) everything is controlled with just seven icons: page forward, page back, print, erase, stop, oops! and mix.

"Stop" quits the program, "oops" is an "undo" command that cancels the last color fill. "Mix" toggles the color palette between pure and dithered colors. In plain high-res graphics mode, the Apple II has a pretty small box of crayons—only sixteen shades including black, white and two greys. The alternate palette gives the young artist many additional pastels and textures to work with.

A six-page leaflet (the same in each program) has minimal instructions for parents. I was disappointed that no special tips for using the program with the Apple IIGS were provided. *Sesame Street Crayon* runs under ProDOS 1.1.1, but it works fine on the GS at either speed, and (unlike some programs) it recognizes the GS serial port for printing. Some people think that Apple high-res colors and text look funny on an RGB monitor, so some finicky IIGS users might find *Sesame Street Crayon* visually blah. Most users don't notice the difference.

A colorful poster of Big Bird was also included in each package.

"Numbers Count" teaches the numbers from 1 to 10 with pictures that show multiples of common objects. "Letters for You" illustrates several different objects in each frame with names that all begin with the same letter (moon, mice, and magician for example). "Opposites Attract" uses cartoons to illustrate such concepts as inside/outside and above/below.

Each of the disks has between 26 and 30 pictures. The Sesame Street trademark has become a synonym for quality in preschool educational media, and the Children's Television Workshop made a good choice in selecting Polarware to produce their software. These three disks are reasonably priced and the software is well-designed. Regrettably, the programs are copy-protected. This is always a bad idea, but it is particularly unfortunate in media designed for small, usually dirty, fingers. (Polarware, P.O. Box 311, Geneva, IL 60134.)

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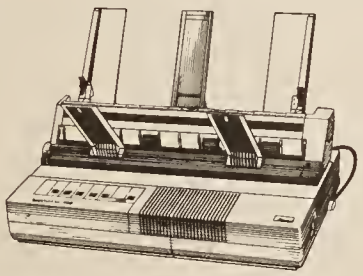

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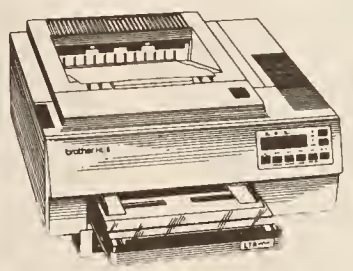

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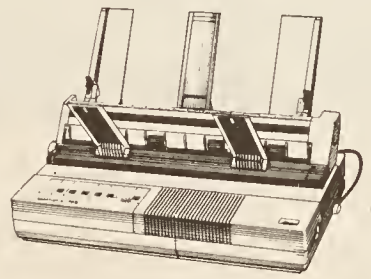

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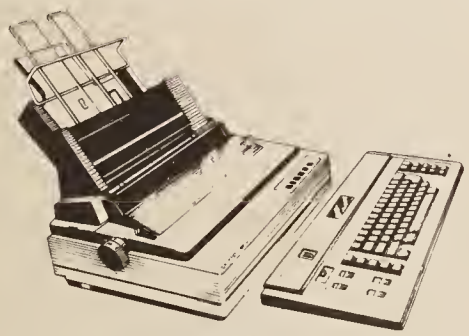

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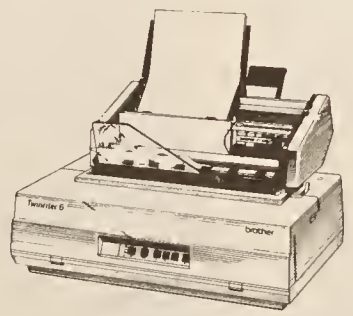

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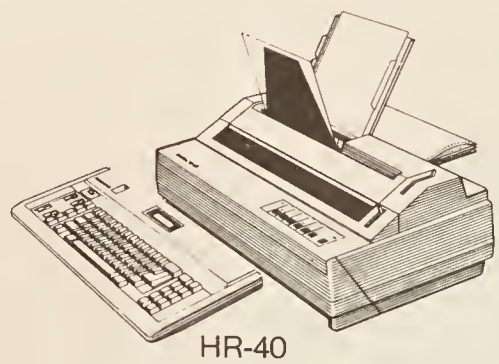

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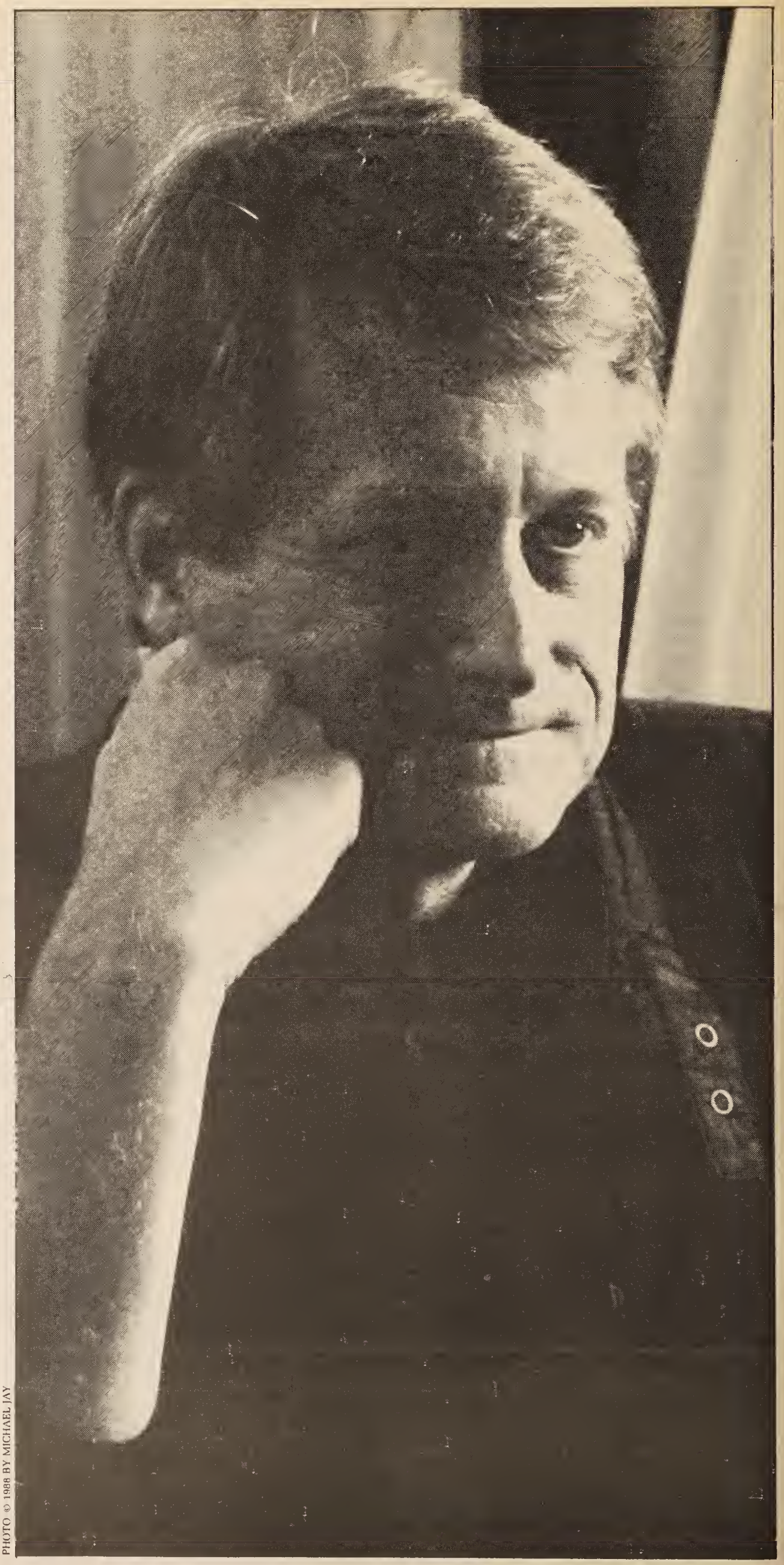
"I chose the term 'hypertext' very carefully back around 1963 or '64, published it in '65. I was sure that it would catch on like wildfire, and I was right. The only trouble was it caught on like wildfire twenty years later."



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Ted Nelson And The Ultimate Information Machine

By David Gans

Ted Nelson's is a powerful vision, one that carries the hacker ethic to a glorious fruition even as it flies in the face of all that is holy in our capitalist paradigm.

"The way information has been marketed down the years is the sort of lord-and-peon model," Nelson says. "The information lords create something which is then dusted out to the information peons, who can take it or leave it.

"We are now ready for another world in which we are *all* information providers, and we can modify and suggest modifications to everything. The point is to create a pluralistic world in which all of this is available to everyone, not to create another big marketing world where things can be launched at great launches and promoted with great promotions, and all that gets out is that which the big corporations decide."

It takes a nervy man to promulgate such stuff, and Ted Nelson has made a career of being nervy. "I have a very strong point of view. I'm a 1950s liberal and a 1940s Disney person. A movie person. It's not that I'm on the ivory forefront — I'm very much in the past also. I'm probably one of the few people who remembers Pearl Harbor who went to Woodstock," he laughs. "I span the generations."

A revised and updated edition of Nelson's 1974 book, *Computer Lib*, has just been published by Microsoft Press under the Tempus imprint. Despite its quaint title — which was probably exactly the right name for it in the years when "the computer" was an ominous, opaque and often fearsomely inflexible presence in our lives (check out *Desk Set*, the 1957 Tracy-&-Hepburn movie, among many '50s- and '60s-vintage examples) — the book is *still* (or again, as the computer now sits pleasantly on the desk, whistling a tune and offering to brew up some coffee) a timely and valuable collection of opinions, explanations and suggestions to demystify computers.

Nelson is one of those multifarious souls who understands a variety of disciplines well enough to be an effective cross-pollinator of ideas as well as a menace to stodgy establishment types just about anywhere he decides to work. *Computer Lib* pokes at stuffed shirts and purveyors of "cybercrud" in a festive procession of rants, raves and appeals to reason, profusely illustrated and quite clearly meant for nonsequential reading.

Computer Lib is an obvious candidate for hypertext treatment. Throughout the book, pieces of text point to other sections (which point to other sections) and to *Dream Machines*, another mid-'70s Nelson extravaganza which is bound back-to-back with *Computer Lib* to make a two-headed document; pertinent quotes, charts and freehand drawings are splashed all around. If it were a *HyperCard* document instead of a paper-and-ink object, *Computer Lib* would be an explosion of pop-up fields, provocative "click me" icons and bursts of sound. There are gems in 24-point type all over the place, even sideways on the page. "The good news: ANYTHING IS POSSIBLE on your computer. The bad news: NOTHING IS EASY."

As the "personal" computer (which Nelson insists is absolutely no different from a "business" computer — any more than there's a difference between a business and a personal car) gets better and better at retrieving larger amounts of information faster and faster — as computers get more *hyper*, if you will — some of Nelson's visions are beginning to appear in concrete form. He himself has been working for years on the Xanadu system, a universal publication engine which he hopes will bring about electronic democracy, at least in the literary realm. And Apple Computer is touting *HyperCard*, an extraordinarily flexible presentation and storage medium for the Macintosh which puts impressive tools, text, graphics and even sound into the hands of "civilians" without the necessity for complex programming languages and compilers.

Nelson: I've always been a generalist. I got into computers because I had trouble writing my books on philosophy. This was a hard problem.

I had a complete philosophical system at the age of 23. When I say complete, I mean it was comprehensive in the sense of being well-articulated and tied together. It was still lacking, but I knew I was on to something, and I had terrible trouble organizing it. But I knew that organizing ideas was a hard problem. Many people confronted with big manuscript situations say, "It must be me," or "The material isn't there." Neither of these was the case — I knew I had the material, and I knew I was smart, and I had written lots of things. So the problem was a hard problem, and that's what got me into computers. I took a computer course and said Wow! This is the way to organize reading and writing in the future! Of course!

And then, in successive *waves* it came on me — this was October/November of 1960 — that the computer screen would be where human beings would live, and not only would we organize writings on them, but we would organize writings *for* them, so that there'd be no need for paper. *(laughs)* It was a little premature, but I thought paper publishing would be ended by about 1963....I thought it was manifest destiny. But I wanted to be in on it.

What does all this hyperstuff mean?

I take the use of the term from mathematics, where "hyper" means "extended and generalized." "Hyperspace" means space with more than three dimensions; Hyperchess is the game of chess played on a chessboard with more than two dimensions — and so it's a perfectly standard term in mathematics and always has been. In the social sciences, psychology and medicine, especially, "hyper" has been an adjective meaning "agitated and pathological." So there is this awkward tension of terminology.

I chose the term very carefully back around 1963 or '64, published it in '65. I was sure that it would catch on like wildfire, and I was right. The only trouble was it caught on like wildfire twenty years later. About 1985, for no reason that I could discern, suddenly hypertext became the word of the hour. And now you have hypertext systems on battleships, I just found out, you have hypertext systems in the space program...

What constitutes a hypertext system?

My definition is that hypertext is non-sequential writing with free user movement. It has nothing to do with computers logically — it has to do with computers pragmatically, just the way large numbers and large bookkeeping schemes have nothing to do with computers logically, but pragmatically.

My background is really as a writer and as a filmmaker, and a generalist and a designer. This all led me to imagine, before I knew anything about computers, new ways of publishing things. When I was in college I published kite-shaped magazines, magazines that folded out every different-which-way. The printers never understood what I was doing...Gosh, I had one that rotated as you turned the pages. I had the printer check it over

Copyright © 1988 by David Gans. All rights reserved. Dovid Gons, o "recovering" music journolist, uses HyperCard to produce o notionolly syndicoted rodio program, the Deadhead Hour.

to make sure it was right, that it would work, and he nodded. And then we printed it and put it together and he was astounded, because he hadn't known what I was talking about.

Then there was a magazine called *Flair* back in the early '50s — maybe it was the late '40s — which had all kinds of cutouts and foldouts. Of course it was preposterously expensive and it only lasted about six months. I think it was really the plaything of some very rich woman. But it was wonderful, and it filled me with inspiration for how writing ought to be, of windows and trapdoors and things you open. I'd always imagined writing something like this, writing where you could have paragraphs that opened up like doors and with more behind them.

Writing is the arrangement of words and ideas for the reader. I take writing, by the way, to be a form of design. Many writers would not accept that.

So this was where I was coming from in my thinking, and then I saw the computer. I took a computer course and saw that they had computer screens, and it was instantly clear to me that now you could do all these things — with trapdoors on the screen and things that folded in multiple dimensions — and have it be completely interactive. And this meant that no longer would you have to write to a given length, because the piece could be as long as the reader wanted to go on. There were no space limitations, and you could have side trails that go on forever, for those readers who wanted them. And suddenly here it all was.

And so I started telling people about this in 1965. All I claim is to have seen the obvious....It wasn't obvious to anybody else, but everyone agrees that it's obvious now....I guess obviousness is not timeless, because it must proceed from a certain platform of understanding, and I guess I was just on that platform a little sooner. I was always an extremely isolated person and never thought very much of most people's minds. And consequently — I was just used to the fact that most people didn't understand things. I never thought of people as not understanding what I was saying — I thought that people didn't understand the world, they didn't understand the possibilities. And I still feel this way.

Hypertext seems fairly obvious today —

Right! Well, it is!

But why was it so hard to pitch it to these people? You can make any block of data point to any other block of data, or bunches of data, and you can infinitely expand it, because you can make anything point you at the next thing, and you can color those things and so you can read things in different ways. And it's all so obvious to me, it seems so ripe with potential —

Well, I still don't [know why it was hard]. But I do know more about the paradigm problem, that is, people who think one way have a hard time with people who think another way. For instance, they just can't understand how you could possibly say what you're saying. Religious arguments are like that. How can you possibly believe what you're saying? And the other thing is, there's the levels of professional jealousy and professional stodginess, and all these things are aspects of the social setting.

How much does HyperCard have to do with what you have in mind?

Quite a lot. On the other hand, it does many other things, and it also has certain limitations. You only have a screen-filling cards — scrolling is possible, but it's not really the model — so it encourages the breaking up of materials into screen-sized chunks. On the other hand, it extends marvelously across the entire Apple world, so it's a little different. It's about fifty percent different from what I think of as hypertext, but it allows all kinds of hypertext.

But it's very nonspecific. The best thing about HyperCard is that it doesn't direct you into any particular structure.

One of the nice things about it is that they've got an entry level and progressive usability. It is manifest destiny that the writings and graphics of mankind are going to go off into a universally accessible repository network. Hypertext is essentially the most generalist form of writing, that's all I mean by it. And it's manifest destiny that we're going to have a repository system of publication that will be worldwide for hypertext, and the only question is whether it's going to be good or bad. The design details matter enormously, and how it's controlled matters enormously. It's political issues. Orwell had it nailed; he understood far better than we know.

So basically, that's what the Xanadu system is about. But we have to think of the publishing medium of tomorrow as being a network of hundreds of millions of simultaneous users, and adding hundreds of millions of documents an hour to the system. It cannot be under centralized control.

Well, if that's just there — think of that as just a gigantic cube of data — then it would seem to me that the published product would be — you buy my set of pointers. I'd sell you my pointers, which is my particular look at it.

That's how it works. It has to be smoothly automatic, so I just follow the pointers and you get a royalty, period. I don't have to negotiate. And this also means that —

A number of things remain from conventional publishing. There will be a place for existing institutions, like author, editor, publisher, professional referee, in this new medium. There *will* be copyright, and there will be royalty, but it has to be automatic.

Now one of the things that changes drastically is the front-load cost. Conventional publishing is like the plastics industry: the cost of copy one is hundreds of thousands of dollars.

The cost of publishing will go practically to zero, because publishing simply means placing the thing online and registering it. See, that's the thing that we don't have a mechanism in place for yet in Xanadu. But one of the things Xanadu's going to do is fix those by creating a social mechanism where you actually acknowledge that you're publishing. Right now people post things on bulletin boards — "oh, I'm not publishing anything, it's just a note" — but they are publishing. And this carries responsibilities having to do with copyright, with trade secrets, intellectual property protection, national security, libel and probably a few other things. And it must be acknowledged by the person who puts the thing on there, that he or she or it is a publisher, rather than just casually tossing this around and saying, hey, the point is to let a thousand flowers bloom. You've got to let them bloom, but you've got to know whose they are.

In this gigantic cube of data, I could post a lie. I could post canards all over the place...And errors, too.

And so do we all right now on paper. How do you deal with it on paper? It's going to be just like paper, but faster. In the hypertext network we will have verification links and support links, so that you can say "I endorse this." Or a committee of doctors can say, "We reject this treatment."

So when you read it you can look and see if people don't agree?

Right. The development of the social implications and styles of these linking mechanisms is going to be the principal form of evolution as we see it. The Xanadu system is designed so that everything is a flat file, and you can have trillions of links which cover great spans throughout the docuverse, and you can filter these links instantaneously. That's the key. And designing it so it can scale upward and that deterioration would be logarithmic. Meaning that as the size of the corpus doubled it would be one more fetch for most things. Which is tolerable given the anticipated improvement of hardware. This was the key.

I can see that getting much bigger in every direction.

That's correct. And so making sure that every direction of search was subject to either log-like or at worst square-root-like deterioration behavior was a key to the algorithm on that.

Maybe this would be a good time to explain Xanadu. Inception, design —

The grand way of describing the Xanadu system unfortunately detracts from understanding how it works in small, so let me cover both.

The big scheme is, of course, the worldwide electronic network that will continue to grow as billions of people are attached to it simultaneously over millions of phone lines or satellite connections to their local server. A request at your local machine fans out through the network and brings back fragments that you're implicitly requesting as you wander through your hypertext. Royalties are automatically paid, and in the current conception they're fixed per byte. It's like ASCAP: when you play a jukebox, the same amount of money goes to the authors and producers of each record. This also has some nice limitation aspects, like the number of units of royalty per hour is constant — pardon me, it's the same as the number of bytes shipped.

The key is that you don't monitor who reads what — which is very important. All we know is that so-and-so many bytes left this document, and therefore so-and-so many royalty increments arrive at this document.

And I'm paying the same fractional cent per byte no matter what I'm reading.

Yes. We know that so and so many bytes arrived, and we know that so and so many bytes were taken from each document. And they have to equal. But that's all there is.

So your accounting department doesn't find out the handles on each one, they just know the traffic levels.

That's right. But also it means that the only way the CIA knows what you read is if they monitor your line. They won't be able to find it out from the sources.

That's helpful. But that means that Jacqueline Susann and Ted Nelson and I will all get paid the same rate.

The same rate. But she's going to make more money.

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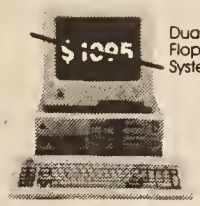

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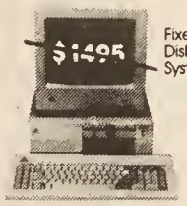

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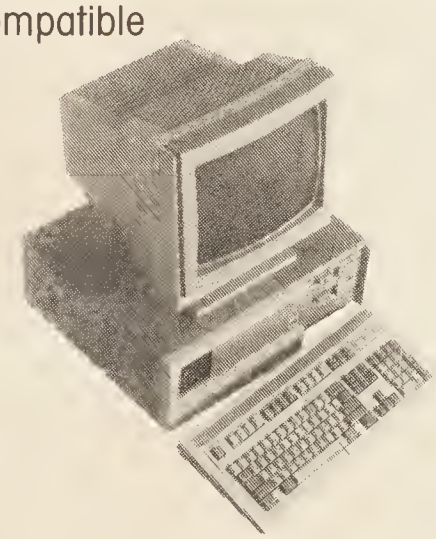

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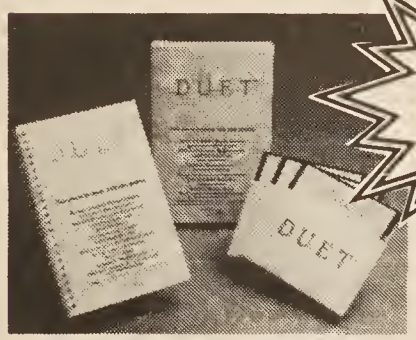

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and controlled. You are obviously for unrestricted access to information.

There can be, in the very nature of the system, no controls on who publishes what. We have legal recourse for libel, for violation of copyright and so on, and there is governmental recourse for violation of laws. But there's no control — it's freedom of the press and freedom of speech, period.

And this has got to be extended that way — by the way, the American Civil Liberties Union takes the same position. So we've established a line. Only last year the great Admiral Poindexter attempted to create a new class of unavailability. He said that there's to be a new class of information called "sensitive and unclassified," which was not to be allowed to foreign nationals or people without the need to know. Thank God we headed that off at the pass, but I see that as just the first battle in the long information wars to come.

A lot of people, and a lot of people in the hacker community, think that copyrighted intellectual property has to go away. And I say no, we can have both, we can have complete access, and intellectual property as a form of reward. So merging these two has been an object of the Xanadu system. See, the way copyright works in Xanadu is that any document can include any other. Any document can quote freely from any other, because it's a pointer. So there's no copyright permission needed — i.e. if you post anything on the Xanadu system at all, that means you have given permission for anyone else to include any part of it in their own document, because that's how it works. However, it's guaranteed that whenever anybody reads part of your document, as an inclusion in the other document, you get the royalty. So it's perfectly fair.

There are two ways to go through Xanadu, along links and along commonalities. If you're looking at a given sentence you can say, "Where else does this sentence appear?", and that's a commonality. That sentence has been quoted so many other different places — you can just flip through all the places it's been quoted. Or you can say, "Tell me how many other places it's been quoted," or "I guess I'd like to see this one and this one and this one" — filtering them by their links and by their owners and by their authors and so on. So you have these two means of travel.

The Xanadu structure is these two things working together, links and commonalities. All the other hypertext systems just have the links. We have this universal quoting mechanism that we make work along with the links.

The way it will look and the way you will interact with it are arbitrary. What remains is the written word and the forms of interconnection. And what Xanadu claims to be doing is only generalizing and electronifying literature as we know it. When I say literature, I mean the procession of interconnected documents — the process of people contributing to this march of documents, which quote each other and have links to other ones.

The other point I make is that the whole computer field is wrong and has to be done over on Xanadu. Let me explain how it works in small.

What's wrong with the personal computer field, as I say here, with the whole computer field, is that we're drowning in files, we don't know what they are. We've got all these stinky little things with silly names; nobody can keep track of them; programs are incompatible. Now Xanadu solves both of those as a form of storage. See, Xanadu is a form of storage, and can be used by just an individual user — it doesn't have to be a vast network. Just on your personal computer it becomes fabulously useful, because it means that no longer do you have a lot of stinky little files.

In Xanadu every byte is only stored once, canonically. So that means that if you take a base letter as boilerplate and write versions of it and send them to different people, and then you want to know what did I send so and so, did I send this to him or that to him, because it's crucial in our contract negotiations. You'll be able to look at the letter you sent to this person, see it side by side with the highlighted things that are different in another version of it. Because they're all referring to the same bytes, and there's the commonalities. You can read along the commonalities, and compare the commonalities in each of them. Commonality is by derivation, it's not scanning to see what's the same. They are the same bytes that are being pointed to, from the one letter and from the other.

And the structure and the data are intertwined everywhere?

Yeah. The overhead isn't that bad. And making sure overhead isn't bad is what took us so long. But once you have this, look what it does for the problem of incompatibility of programs...Xanadu allows you then to use links. Everything you want to mark inside a document, like paragraphs, is a link. The data is totally flat — you just have text in a text file. You can have pictures, but that's something else. That means that we can map all data structures into Xanadu just with links. And now anybody can write an application that uses the same data, by plucking the same links in the same fashion, like harp strings. So that brings compatibility.

What sort of hardware is this on?

It's in C, so you can compile it to any hardware.

Isn't this going to involve gigantic storage media?

No. It's not going to be just in one place. It will be distributed — that's the whole point. Xanadu is designed as a distributed software architecture.

Please excuse the use of this term, but how user-friendly is this? How hard is it going to be to use?

Let me give you my diatribe on "user-friendly." I don't like the term because it suggests superficial conviviality rather than clarity. People are larding the software with all kinds of inane sorts of trivializing forms of social behavior, like saying good morning. A globe doesn't say good morning, yet a globe is extremely clear and useful.

I don't think it's necessary for it to say good morning, or to reach out and grab you by the neck, because if you're not motivated enough to learn how to use the damn thing, you probably don't belong there anyway. But if this thing is going to be as important as you want it to be, it's got to be useful and it's got to be usable.

Xanadu is a data structure. It's a storage mechanism which shifts the endpoints of links and fragments of documents. The way it looks on the screen will be totally arbitrary. Communicating with this central structure and manipulating this central structure is what it's about. We will have front ends for children; there will be front ends for accountants. There will be front ends for different purposes, and they'll all have different styles. Some of them will be more accessible than others, because they'll hide different features and so on. So what I want to get across is, I think it will be extremely simple and clear. Of all the systems I've seen for computers, Xanadu is the simplest in principle, because it's just these links and these commonalities. But getting the idea across is complex because it's so different. I believe it will be as fundamental as the telephone twenty years from now.

These other systems, where you have to learn these complex query languages, and the relation between this mailbox and that slot and this stack and stuff — these are implementation decisions that some guy smoking his pipe made one night that don't have any logical basis except what so-and-so thought was important on a certain occasion.

To me, design is not making arbitrary choices. I see us as electronifying the structure of literature, which is a well-worked-out and debugged system. Linkage and inclusion, these are the bands that hold together this great procession. And we've sped those up, and everything about the implementation of Xanadu has been to make all other features go away. To make everything arbitrary, to make the boundaries of individual servers, the boundaries of individual documents, to make all of these things inconsequential, and thus to make the whole thing a unified whole representing this electronified structure. And so arbitrary decisions, no. Making decisions that smooth and clarify, that to me is design at its highest.

What does your demo look like?

It's tacky. Running on a Mac II is the actual back end storage, which is what Xanadu is, running on an arbitrary terminal, what is it, the Ambassador ...It's divided into four quadrants, and each quadrant holds a different chunk of text, and you can link around clockwise or counterclockwise.

Right now we're crashing a little too often. Any crashes are too often, but we want to get — as long as it's more than one per hour, that's a hell of a lot too many. We've got to get it torture-tested. We're looking for finishing money.

Where is this being done?

The work is all being done in San Jose under Roger Gregory. But this has been a shoestring operation from the first. No one will fund it in paradigm. The suits want to talk to suits. And then the suits adopt what we've been doing, and they claim they did it.

I expect the profile of Xanadu adoption to be like that of UNIX. The corporate world will go one way and say this is it. The people who understand will go another.

The Army and the US government have finally embraced UNIX.

But you have to understand how it started. Two guys did it in the back room, and corporate said no, we don't allow that. Here's our business plan, this is what we're doing. And UNIX had to fight itself out of the back room over ten or 15 years. The people who knew it, who understood it, prevailed over the suits, and now the suits think it was their idea.

I'm very confident that Xanadu will prevail in the long run. There may be ten or 20 years there where other hypertext systems have more market share. They'll have more gloss, but they won't have the depth. The depth is in having both the linkage and the inclusion. Without the inclusion, without the ability of anything to quote anything else freely, and to see, to work across these bridges of inclusion, and say where did this come from, what is the origin of it, where else has it been quoted — that's the magic of this thing. You can think of it as colored strings connecting all the books, or you can think of it as glass bridges. Whatever.

Your local node is only sampling the entire docuverse. The point is, when you're connected to the Xanadu network, you're connected to the Xanadu network, and it's transparent. Your sample of the docuverse in your server knows where the rest is, reaches out and and brings it back, and it's logically the same as if it's there. What is logically on your server is no different logically from what is on the other server — you treat it all as one. □

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Macintosh Toolbox

You will play a major role in conceptualizing and implementing Apple's future database strategies. A background in high-end relational databases, locking and recovery techniques, concurrency control for multi-user access, SQL interfaces, and Macintosh or similar user interfaces is required. Object-oriented programming experience a plus. BS/MS in CS plus 5 or more years' implementing data management systems for application areas like CAD, office applications, AI, or object-oriented environments are preferred. Reply to Dept. BH773MT1.

UNIX Kernel/Drivers Engineers

A/UX Group

We have several opportunities available.

In one area, you'll develop and support UNIX kernel memory management code; port A/UX to new hardware; ensure kernel compliance with System V interface definition as it evolves; and support all Macintosh Toolbox issues as required in kernel.

In another area, you'll develop and support A/UX device drivers for current and forthcoming Apple products.

We also need engineers to support NFS in A/UX. In these positions, you'll port and enhance new NFS versions and implement the latest network protocols.

For all these positions, you'll need a BS/MS in CS or EE with 3-8 years' UNIX development experience. Reply to Dept. BH773MT2.

Macintosh Programmers

We have positions available in our Applications Utilities Group for several levels—from individual contributors to Project Managers, you'll help develop various applications and utilities. For these positions, you'll need Macintosh applications development experience, as well as experience using Macintosh internals, Toolbox, MacAp, and MPW, plus knowledge of C, Pascal, and 68000 assembler. A BS/MS and 3+ years' development experience are required. Reply to Dept. BH773MT3.

Communications Software Engineers

You'll be part of a critical effort in Apple's connectivity strategy developing communications software in the areas of IBM 3278 emulation, 3270 file transfer, X windows protocol, and communications tools. You'll need a BS/MS and 3+ years' experience in one or more of the above areas, along with strong skills in C or Pascal. Macintosh/human interface familiarity helpful. Reply to Dept. BH773MT4.

O/S Development Engineers

As part of the next generation Macintosh O/S effort, you'll be doing file systems development and enhancement. You'll need a background in one or more of the following: multi-tasking O/S, device drivers, and file systems. You must be proficient in assembly language programming (68000 preferred) and C or Pascal. A BS/MS in CS and experience in developing multi-tasking O/S software in a production environment preferred. Reply to Dept. BH773MT5.

Software Engineers

Printing and Text

You'll play a senior role in designing multifont, multistyle text editing software for the Macintosh Toolbox Group. A background in WYSIWYG or desktop publishing applications development is important; we'd like your emphasis to be in developing real-time, interactive text editing system software. You'll need a BS/MS in CS or equivalent, and 4+ years' experience in the above mentioned areas. Macintosh programming familiarity is a plus. Reply to Dept. BH773MT6.

Software Engineers

Graphics and Outline Fonts

In the Graphics positions, you'll participate in developing a new graphics implementation for the Macintosh. Opportunities are available in the areas of color management, fast blit code, bitmap manipulation, and coordinate transformation.

In Outline Fonts, you'll work on projects such as analysis of different outline formats (cubic splines and quadratic splines), outline format conversion, or optimized rastering techniques.

For all these positions, you'll need a BS/MS and experience in interactive graphics and one or more of the above mentioned disciplines. Macintosh Toolbox experience is very helpful. Reply to Dept. BH773MT7.

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The Thirteenth
West Coast

Computer Faire

Moscone Center,
San Francisco
April 7, 8, 9, 10

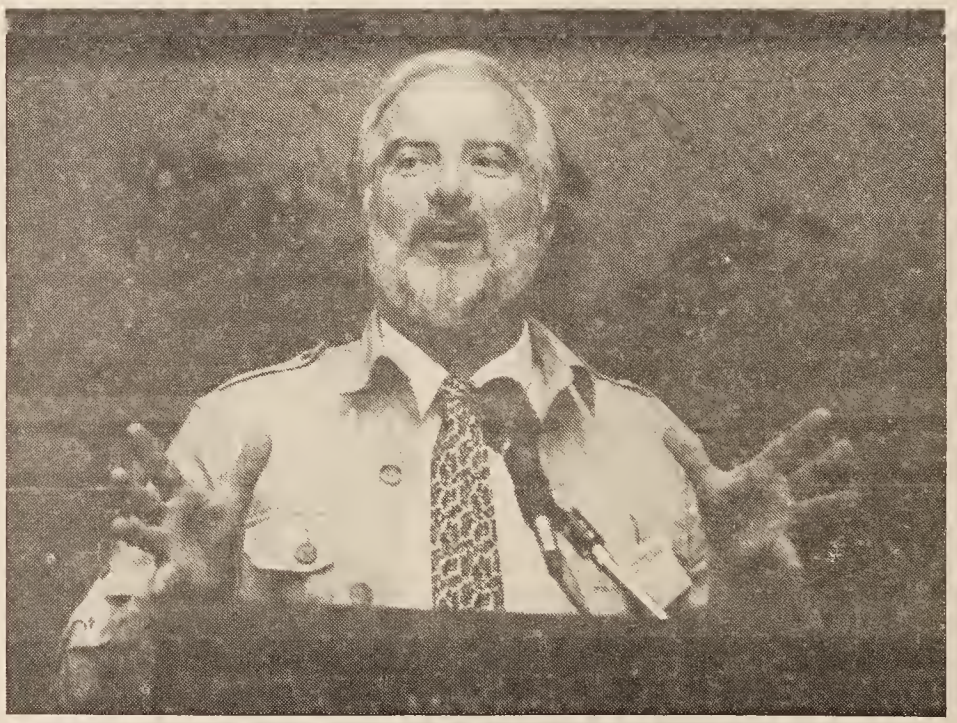
Jim Warren Recalls The Beginnings Of The Computer Faire

By Mary Eisenhart

"Somewhere when I was being brought up," recalls Jim Warren, "I got injected with this notion that we really have a responsibility to make a positive contribution to our society and to our culture. To the extent that we put in more than we take out, the society is enhanced and the future is brightened. To the extent that we withdraw more than we invest, society degrades and the future is dimmed."

Warren's made a few contributions in his time, as teacher, as an early leader in the Mid Peninsula Free University movement, as the founding editor of Dr. Dobb's Journal *and founder of the paper that became* Infoworld, *as a pioneering member of the Homebrew Computer Club—and, perhaps his most famous achievement, as founder of the West Coast Computer Faire, which continues to be the most popular and distinctive of user-oriented microcomputer events.*

In this year's Friday panel, "The Future and How to Get There," Warren will host a discussion by industry pioneers and current movers-and-shakers Adam Osborne, George Morrow, Steven Edelman, Dave Hughes (see Links column, Issue #38), and Ted Nelson (see cover story). This not-to-be-missed opportunity to hear the creators of today's technologies and visionaries of tomorrow's takes place in Ballroom G from 1 pm until 2:30 pm.



Jim Warren, founder of the Computer Faire, chairs a panel discussion on "The Future And How to Get There," Friday, April 8 at 1 pm.

"Uh, we know you're not lost," say the polite young men in the driveway, one of whom, I later learn, is responsible for much of the spectacular woodwork in the "house the Computer Faire built," "but where are you going?"

As Jim Warren gives the personalized tour of his mountain retreat, from which he ran the Computer Faire until he sold it in 1983 and which, on non-foggy days, commands a view of several counties and miles of ocean, he explains that things are a little *different* out here on the coastal side of the hills, in an unincorporated area of San Mateo County. For one thing, they don't take kindly to county officials telling them how to live in those parts; from this house, appointed with typesetting machines, computers, video equipment, and a mind-boggling array of other resources, Warren currently publishes the *Peninsula Citizen's Advocate* as part of the campaign he and his neighbors are waging to eliminate what they consider the excessive and intrusive attention of the building inspector and planning commission, and I'm given the once-over to establish that I'm not one of their minions.

Warren's eclectic career as academic, activist, programmer, journalist, and bringer of the Computer Faire to an eager populace began in

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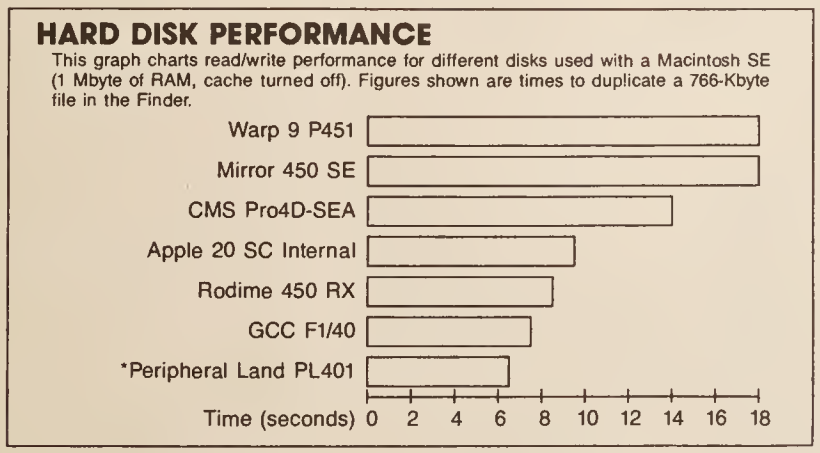

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The Thirteenth West Coast Computer Faire

1964, when, as a Texas math teacher, he hitched up his house trailer and headed for California, arriving just in time for the full explosion of the '60s countercultural movement. His early involvement in the Stanford (later Mid Peninsula) Free University brought him into contact with computer pioneers, and it was as a result of this contact that he first found himself, with only an ancient college course in Fortran for background, confronting the mysteries of a PDP-8 minicomputer in 1966.

Ensuing years found him pursuing a series of technical degrees while building a career in computer consulting and leading the Free U to unprecedented success and expansion. Finally, one day in late 1975 he parted company with Stanford's Ph.D. program and called up his old Free U associate Dennis Allison looking for work ideas. Allison, as it turned out, had just the thing.

In January 1975, *Popular Electronics* had featured the MITS Altair on the cover and the personal computer industry (which wouldn't be called that for some time yet) was born. Allison and Bob Albrecht, whose People's Computer Center (later People's Computer Company) was an early gathering place and hotbed of discussion for enthusiasts of the new machine, wanted to publish a newsletter supporting the burgeoning ranks of hobbyists.

"The Altair had come along," Warren recalls, "and in the spring, summer and fall issues of the PCC newspaper, Dennis had written a series of design articles about how to create a tiny version of BASIC that would fit on the microcomputer. At the end of the third one he said, 'Okay, now that I've told you how to do it, go forth and do it, and let us stand on each other's shoulders, not on each other's toes. When any of you readers complete this, send the results in and we'll publish them, so that we can share this with everyone.'

"In comes this first design from Whipple and Arnold out of Texas someplace, and it's page after page of octal code. No source code at all—they were going to send along the source code later as soon as they wrote it down. But they said that they had loaded it into their Altair through the switch registers, switch by switch, byte by byte, and it ran fine until the power dropped out. And they were going to get it loaded next week and really enjoy it. . . .

"PCC's intention was to put out just a little three-issue quickie that had the first two or three implementations. They got inundated with mail saying 'For God's sake, don't stop now. The only other magazines around [the new *BYTE,* for instance] are all talking about hardware; we need software.'"

"It continues to be my contention that the very rapid growth of microcomputing and the leadership position that Silicon Valley held in that growth was, to a large extent, due to that ready sharing of information, of sharing of solutions. Instead of trying to hide them, lock them up, and patent them, you went out and shared them."
—Jim Warren

Allison finding his consulting business more lucrative, and Albrecht being out of his depth beyond BASIC, Warren was easily induced to take over the publication—*Dr. Dobb's Journal of Computer Calisthenics and Orthodontia*—in January of 1976. So enthusiastic was he about the project that he took it on as a full-time job for the $350 per month he'd been making as a teaching assistant at Stanford, putting his lucrative consulting work on hold.

These were heady days in the Valley; the Homebrew Computer Club had been founded in Gordon French's garage in 1975, and Warren was at the second and most of the subsequent meetings. Since he was the only computer magazine editor based in the Valley and uncursed with six-month lead times, *Dr. Dobb's* became a preeminent source of up-to-the-minute news.

"Everything was chaos," Warren says fondly of those days. "Everyone was going like a bat out of hell, and in those days, everybody was sharing. It was really neat. Everybody had problems—all of us were facing the same kinds of hardware and software problems. And as soon as a problem would be solved, the first thing you'd do is run down to the Homebrew Computer Club and say, 'Hey, everybody, you know that problem we used to have? I've found a solution. Here it is.'

"It continues to be my contention that the very rapid growth of microcomputing and the leadership position that Silicon Valley held in that growth was, to a large extent, due to that ready sharing of information, of sharing of solutions. Instead of trying to hide them, lock them up, and patent them, you went out and shared them."

Out of this enthusiasm and brainstorming fervor, the Computer Faire was born. In 1976, Warren and others began hearing about hobbyist gatherings on the East Coast, and attended Personal Computing '76, a show which drew thousands of eager attendees, despite the mind-boggling drawback of being scheduled for Atlantic City in August and the comfort factor being every bit as nonexistent as expected. Warren, who had agreed with his cohorts that all the good events seemed to be happening on the wrong coast, passed out hundreds of flyers inviting people to the First West Coast Computer Faire, an event which blind optimism led them to believe they'd be holding in Stanford's Memorial Auditorium the following spring.

Coming as he did from an academic background, Warren wanted the Faire (the "e" because Warren wanted to suggest the ambience of the Renaissance Faires) to be more than exhibits; he wanted a full schedule of strong conferences. Which required conference rooms instead of cavernous halls, so it threw plans into something of a tailspin when Stanford announced that the Memorial Auditorium wasn't going to be available after all. Regrouping rapidly, he and his partners (Bob Reiling, who edited the Homebrew Computer Club newsletter, and Eric Bakalinsky, who had, among other things, named *Dr. Dobb's*) discovered the joys of the San Francisco Civic Auditorium—and a price tag, $13,000 per day, that made them realize that there was more than fun and games involved. Performing the necessary calculations and comparing the proposed Faire to the Atlantic City event, the partners reached the astonishing conclusion that this hacker-fest might actually make some money.

Reiling, who actually had a decent-paying job, put up the money to reserve the hall. Warren commenced calling up his friends from Homebrew, the Free U, and the East Coast shows. "I think it took less than a week for us to be in the black, and we were in the black from there on," Warren laughs. "Steve Jobs called up fairly early on, and said, 'Hey, I hear you're doing a computer fair in San Francisco.' I said yeah, and he said, 'well, we've created this new company called Apple, and we want the front two booths, right in the center of the front entrance.' I said,

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The Thirteenth West Coast Computer Faire

'Okay, just send me the contract. . .'

"We didn't know what we were doing," he laughs. "The exhibitors didn't know what they were doing, the public didn't know what the hell was going on, but it was an interesting experiment." Warren put his printing press to work again and covered the Bay Area with the *Silicon Gulch Gazette*, the paper he'd created to publicize the event, and by the time the show opened in April 1977, it was obvious that the enterprise had succeeded.

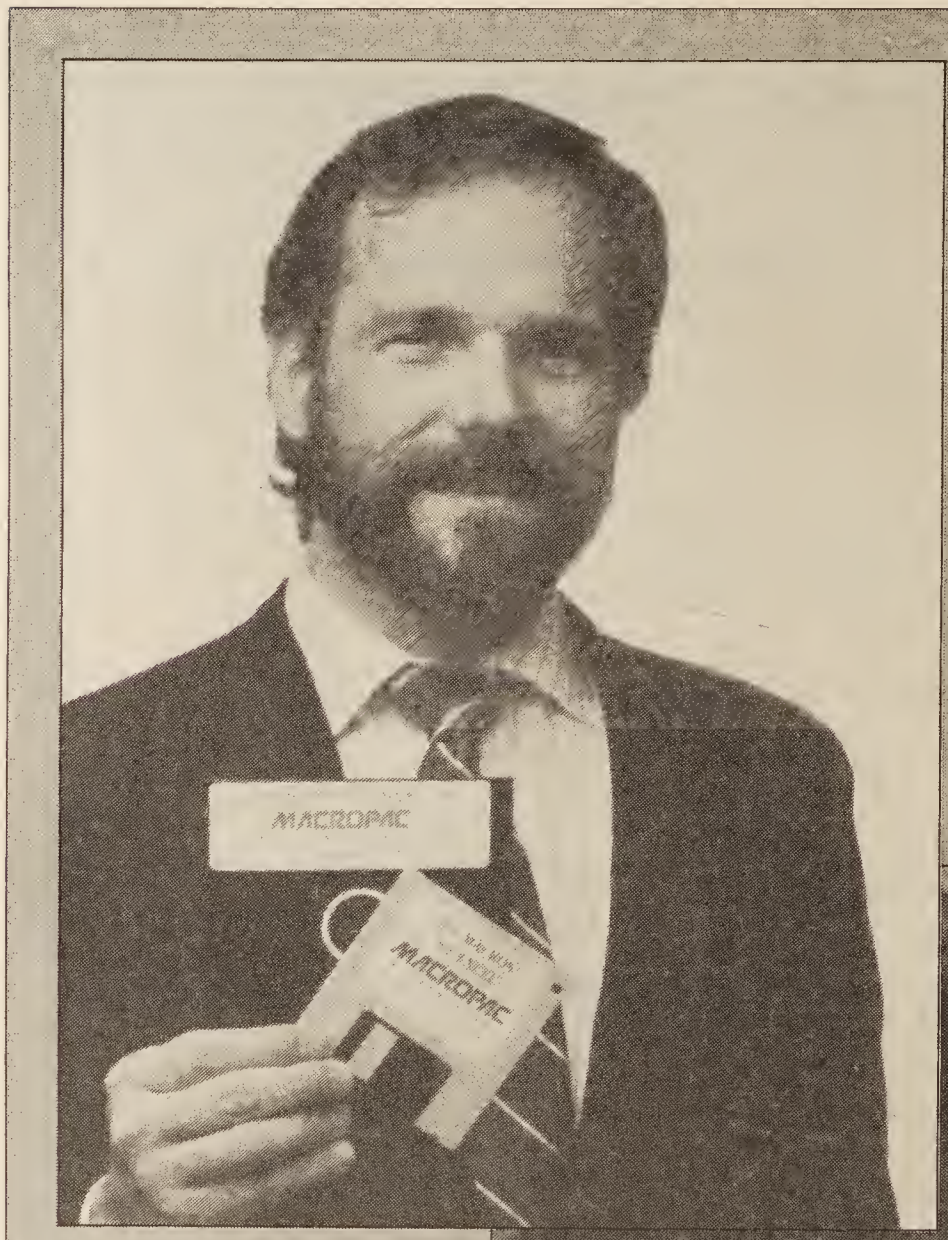
Two lines of preregistered attendees stretched to the back of the Civic, where it met three lines of ticket buyers coming from the opposite direction. "We opened the doors," says Warren, "and *my God,* it was a zoo. But nobody was upset. People were just, 'Hey, yeah, I'm thinking of getting one of these things called an Altair.' 'Oh, I have one.' 'Yeah? wow! Tell me about it!' Nobody seemed to be in a rush.

"I was hyping it just a little," he admits, "when I said, 'Well, I expect 7-10,000 attendees. We came in just short of 13,000."

The Faire had originally been conceived as a one-time event. After it was over, the partners got together and, as Warren recalls, "We said 'God, that was a killer. Wasn't that fun?' And, '*LOOK* at this bank account!' All three of us agreed pretty quickly that it was was too steep a learning curve not to do it again, and way too profitable not to do it again."

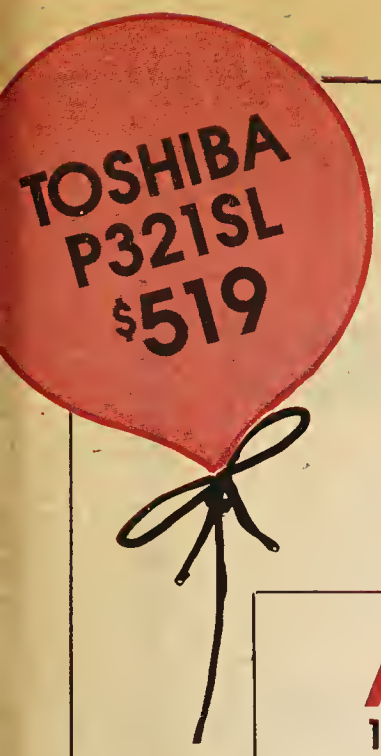
So the Computer Faire was born. Somewhere along the line, Warren bought out his partners. Around the fourth year, he started navigating the show floor in roller skates, and the Faire itself grew to monstrous proportions. Finally, in 1983, he sold the Faire to Prentice-Hall (it's now the property of The Interface Group).

Though it's grown and matured with the industry, the Faire still retains much of its original flavor of user fervor and idea exchange, where the spirit of fun and adventure are as much in evidence as the sober corporate presence, the garage startup is as integral to the scene as the industry giant, and new ideas continue to be discussed with zest. Which, Jim Warren would probably say, is as it should be.



Michael Lunsford of Macropac International is on a panel discussing "The New Spreadsheets," Thursday, April 7, 11 am, Room 228/230.

Jan Lewis hosts "The Master's Screening For Desktop Video," Sunday, April 10, 11 am, Ballroom H.



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Conference Schedule

Thursday, April 7

PS/2 Retrospective: One Year and 1.5M Machines Later
Time:11 am-12:30 pm **Room:** 220/226
Tim Bajarin, Creative Strategies Int'l

Desktop Communication Tools: FAXes, Scanners, Modems and More
Time:11 am-12:30 pm **Room:** 236/238

Software Add-Ons for Supercharged Productivity
Time:11 am-12:30 pm **Room:** 232-234
Rick Gibson, The Consortium
Michael Lunsford, Macropac International

Beyond Rows and Columns: The New Spreadsheets
Time:11 am-12:30 pm **Room:** 228/230
Jared Taylor, *PC Magazine*

Keynote: The Future of Standard Computing
Time:1 pm-2:30 pm Room: Ballroom G

The Macintosh's Second Coming
Time:2:45 pm-4:15 pm **Room:** 220/226
Ash Jain, Irvine Research Group

OS/2: Where Are We on the Road?
Time:2:45 pm-4:15 pm **Room:** 236/238

Mass Storage I: Hard Disks and Backup
Time:2:45 pm-4:15 pm **Room:** 232/234

The New Deal: New Mail Systems and Services
Time:2:45 pm-4:15 pm **Room:** 228/230
Einar Stefferud, Network Management Associates

The Emerging Generic '386 Standard or Which Bus Do I Take?
Time: 4:30 pm-6:00 pm **Room:** 220/226
Tim Bajarin, Creative Strategies Int'l

The Newest "Big" Application: The Information Manager
Time: 4:30 pm-6:00 pm **Room:** 236/238
Andy Olson, PFS Incorporated

Connectivity to Interoperability: Building the Bridges
Time: 4:30 pm-6:00 pm **Room:** 232/234
Einar Stefferud, Network Management Associates

Mass Storage II: Optical Subsystems
Time: 4:30 pm-6:00 pm **Room:** 228/230
Roger Strukhoff, *CD-ROM Review*

Friday, April 8

UNIX: Same Old Issues and Changing Standards
Time:11:00 am-12:30 **Room:** 220/224

Low Cost Networking Alternatives
Time:11:00 am-12:30 **Room:** 236/238
Robert Clark, Infonetics, Inc.

Unparalleled Platforms: Amigas, Ataris and More!
Time:11:00 am-12:30 **Room:** 232/234
Neil Harris, Atari Group
Bruce Webster, *Macworld*

The Future and How to Get There
Time:1:00 pm-2:30 pm **Room:** Ballroom G
Jim Warren, Computer Faire Founder
George Morrow
Steven Edelman, SuperMac Technology
Dave Hughes, Old Colorado City Communications
Adam Osborne, Paperback Software International
Ted Nelson, Project Xanadu

Sizzling Systems: Alternative OSs That Deliver
Time: 2:45 pm-4:15 pm **Room:** 220/226

Feature Wars in Programmable Databases
Time: 2:45 pm-4:15 pm **Room:** 236/238
Dr. Doris G. Duncan, Cal State University Hayward

Display Bonanza: Things Never Looked So Good
Time: 2:45 pm-4:15 pm **Room:** 232/234
Harmon Cadis, ICT Technologies, Inc.

Redefining Word Processors
Time: 2:45 pm-4:15 pm **Room:** 228/230

Workshop on Peer Level PC LANs
Tom White, Infonetics, Inc.

The Inside Story: What You Need to Know About SQL and SAA
Time: 4:30 pm-6:00 pm **Room:** 236/238

What Makes a Workstation, and Who's Invading Whose Turf?
Time: 4:30 pm-6:00 pm **Room:** 232/234
Sam Whitmore, *PC Week*

Writing the Better Business Plan in High Tech
Time: 4:30 pm-6:00 pm **Room:** 228/230
Robert Ronstadt, Lord Publishing, Inc.

HyperCard: A Critical Overview
Time: 4:30 pm-6:00 pm **Room:** Ballroom H
Dan Schafer, Author and Consultant

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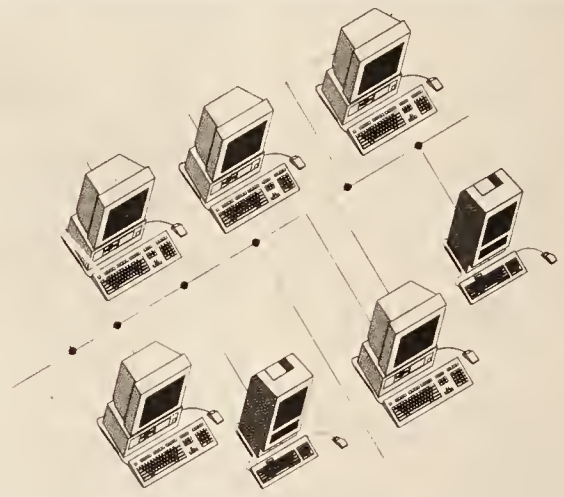

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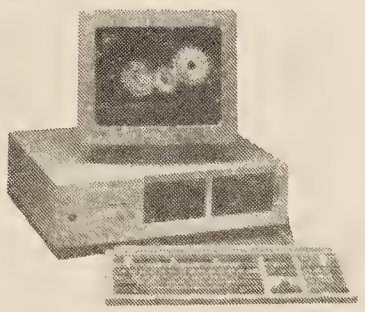

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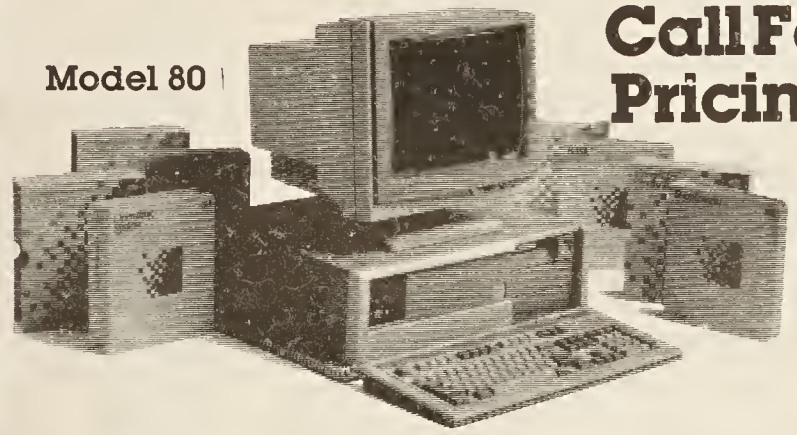

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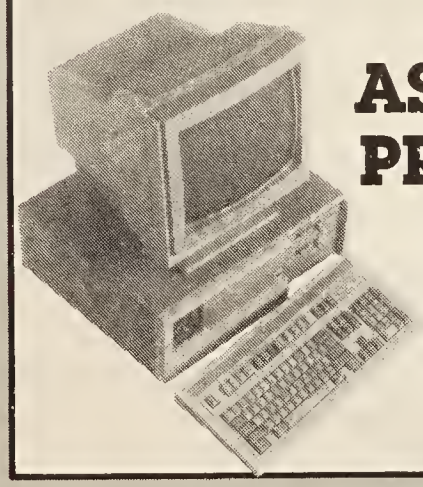

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Saturday, April 9

DTP on DOS: A Critical Overview
Time: 11:00 am-12:30 **Room:** 220/226
Jim Felici, *Publish!*
Michael Weiss, Infonetics, Inc.
Amy Wohl, Wohl Associates

On the Inside Looking Out: A Windows Overview
Time: 11:00 am-12:30 **Room:** 236/238
Mark Eisner, Softbridge

Your First Computer: From Purchase to Productivity
Time: 11:00 am-12:30 **Room:** 232/234
Mary L. Rich, PFS Inc.

Accounting Software on Mac vs. IBM: How Do They Really Compare?
Time: 11:00 am-12:30 **Room:** 228/230
John C. Lukrich, CPA, J. C. Lukrich & Co., CPAs

The Shareware Phenomenon: User Supported Software
Time: 11:00 am-12:30 **Room:** 202/210
Saul Feldman, *Computer Currents*
Tom Smith, Datastorm Technologies
Marshall W. Magee, Magee Enterprises
Richard Peterson, PC-SIG

The Master's Exhibition for Computer Aided Art
Time: 11:00 am-12:30 **Room:** Ballroom H

The World According to Pournelle
Time: 1:00 pm-2:30 pm **Room:** Ballroom G
Jerry Pournelle, *BYTE* Magazine

So You Wanna Be a Game Designer
Time: 2:45 pm-4:15 pm **Room:** 220/226
Chris Crawford, Game Designer, Mindscape

Dirt Cheap DTP for the Entry Level User
Time: 2:45 pm-4:15 pm **Room:** 236/238

Defining Laptop Productivity: A Critical Overview
Time: 2:45 pm-4:15 pm **Room:** 232/234

Capital for Start-Ups
Time: 2:45 pm-4:15 pm **Room:** 228/230
Andrew Roman, RAI International
Chris Yalonis, The Jupiter Group

Legal Systems
Time: 2:45 pm-4:15 pm **Room:** 202/210
Martin Dean, Attorney at Law
Rick Giardina, Micropro International
Robert E. Schaberg, Attorney at Law

Language Wars: The Win-Win Battle
Time: 4:30 pm-6:00 pm **Room:** 220/226

Son of Publishing: Desktop Presentation
Time: 4:30 pm-6:00 pm **Room:** 236/238
Tim Bajarin, Creative Strategies Int'l

You Are Not Alone: CUGs, SIGs, Mags, and BBSs
Time: 4:30 pm-6:00 pm **Room:** 232/234

Career Workshop for Career Changers
Time: 4:30 pm-6:00 pm **Room:** 228/230
Jay Elliot
Bill Gladstone, Waterside Productions
Susan Payne, Fargo Search International

Software for Investors
Time: 4:30 pm-6:00 pm **Room:** 202/210
Saul Feldman, *Computer Currents*
Lisa Powers-Frey, Telescon
Jordon Sachs, Brittanica Software

The Master's Concert for Computer Aided Music
Time: 4:30 pm-6:00 pm **Room:** Ballroom H

Sunday, April 10

Protecting Your High Tech Ideas
Time: 11:00am-12:30pm **Room:** 220/226
Gary Hecker, Blakley, Sokoloff, Taylor, Zafeman
Carey Heckman, Ware & Freidenrich

Strategies for Developing in the OS/2 Environment
Time: 11:00am-12:30pm **Room:** 236/238

Sales Systems
Time: 11:00am-12:30pm **Room:** 232/234

Master's Screening for Desktop Video
Time: 11:00am-12:30pm **Room:** Ballroom H
Jan Lewis, Lewis Research Corp.

Disk Caching and Memory Management Tools
Time: 11:00am-12:30pm **Room:** 228/230
Alan Kaplan, American Index Systems

The Master's Demo for Special Effects
Time: 1:00pm-2:30pm **Room:** Ballroom G

CASE: A Critical Overview of Applications Generation Tools
Time: 2:45pm-4:15pm **Room:** 236/238

Laser Printers: Fonts, PDLs, and the Biggest Bang for the Buck
Time: 2:45pm-4:15pm Room: 232/234

Architectural Systems
Time: 2:45pm-4:15pm **Room:** 228/230

Medical Systems
Time: 2:45pm-4:15pm **Room:** 220/224
John Stuppy, Articulate Publications, Inc.

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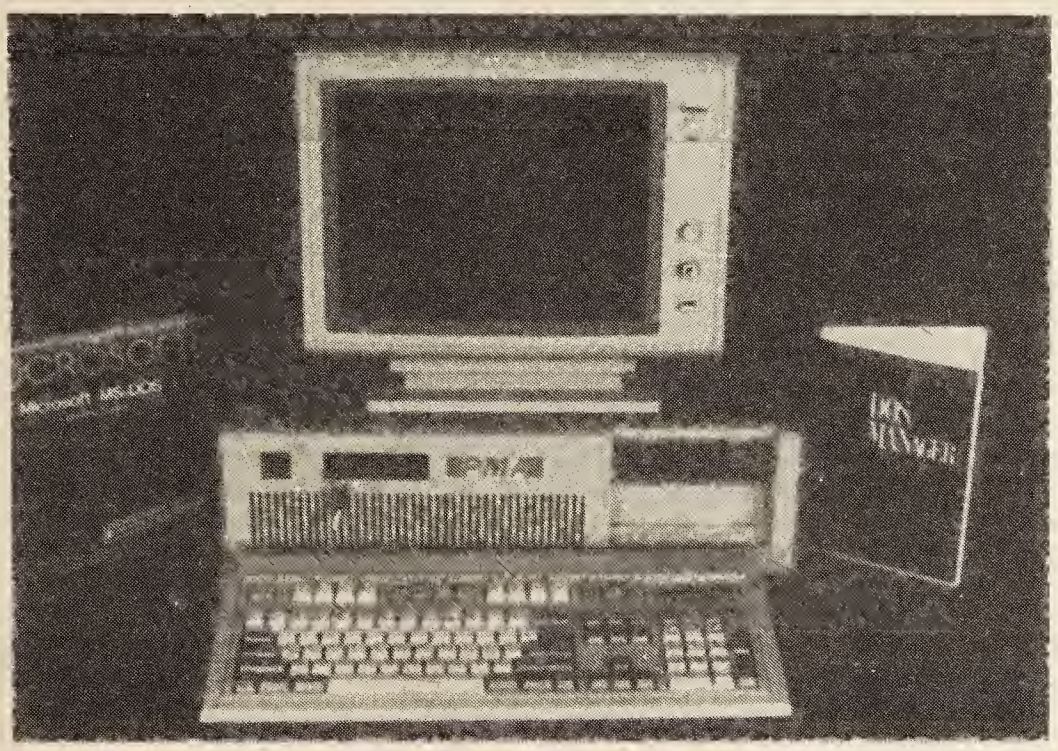

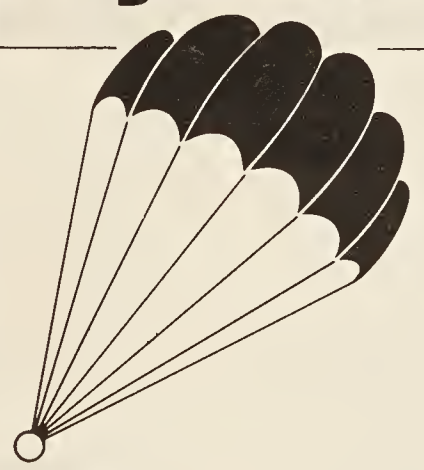

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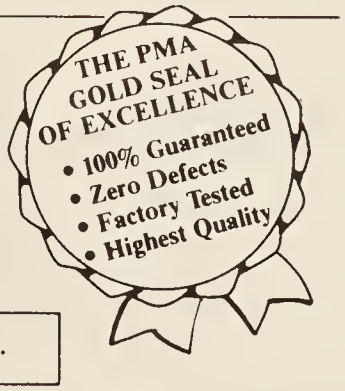

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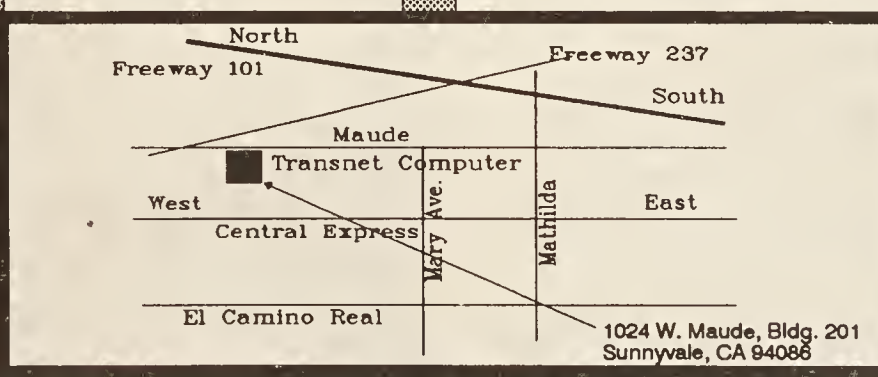

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Product Announcements

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- AcroSpin is programmed entirely in assembler language.
- Suggested retail price: $30. You may order copies directly from Acrobits.

Please see the back cover for mor

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AcroSpin Lets You Move, Rotate And Scale 3-D Wire Frame Objects

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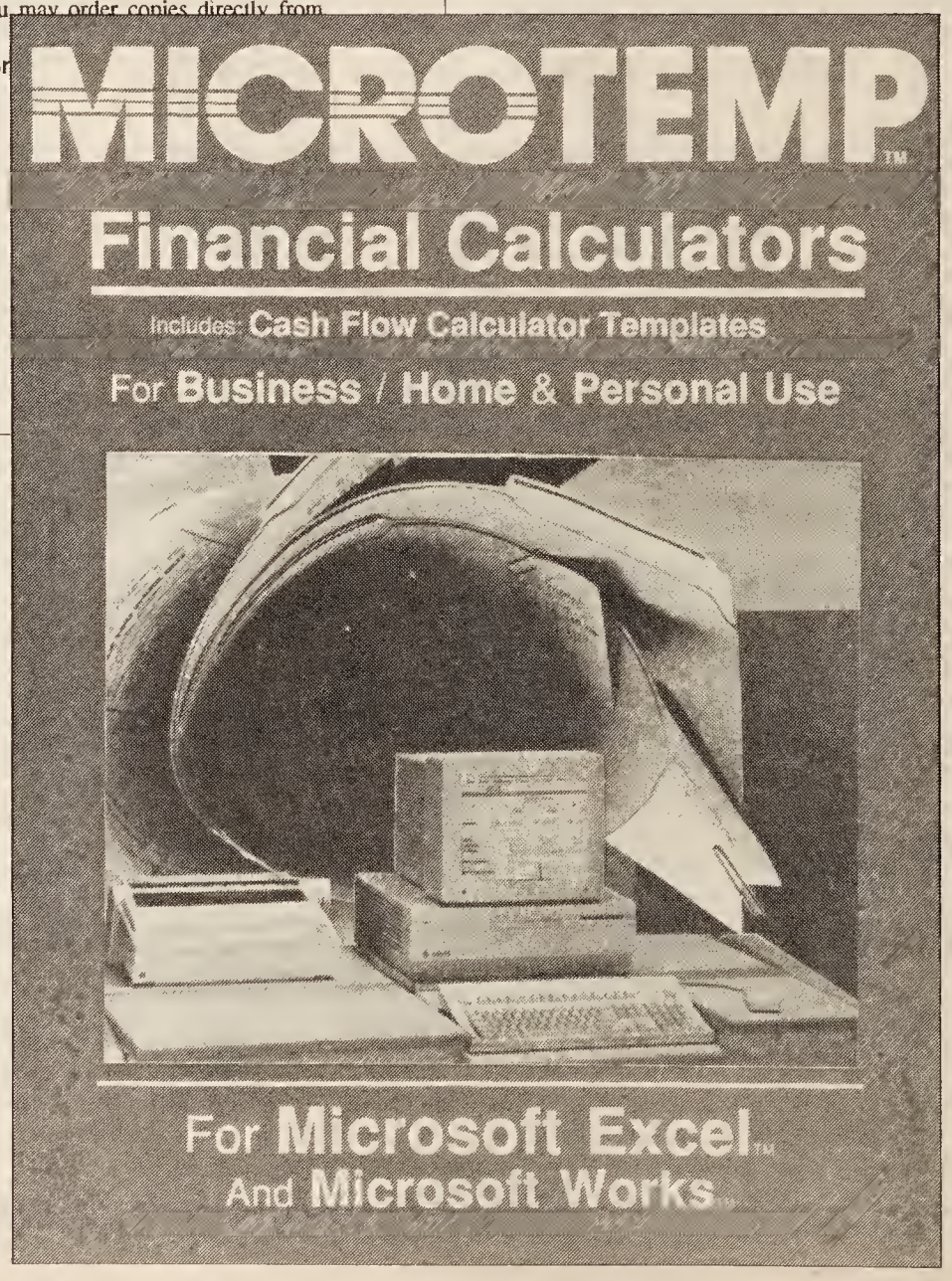
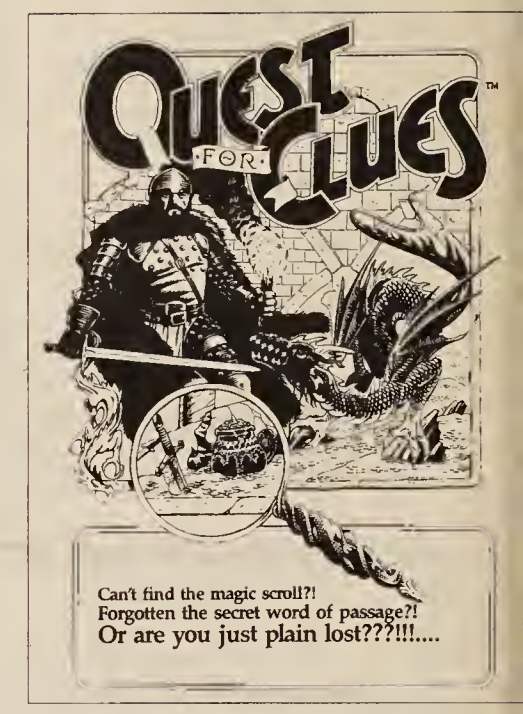
MicroTemp Financial Calculators For Microsoft Excel And Works

MicroTemp Financial Calculators for MicroSoft *Excel* and Microsoft *Works* on the Macintosh are templates that accelerate financial calculations. MicroTemp provides calculators for personal cash flow, business cash flow, financial ratios, real estate investment and financial planning along with 10 other templates. Easy personal customizing of the Cash Flow Calculators is also possible, allowing for accurate forcasts of actual cash needs such as receivables, payables and production costs. MicroTemp P.O. Box 1208, Santa Rosa, CA 95402.





Quest For Clues Aids The Adventure Gamer

Quest For Clues from Origin Systems is a cluebook with solutions to 50 of the most popular computer text adventure and fantasy role playing games, including *Autoduel*, *Ultima IV*, *Bard's Tale* and *King's Quest III*. Many of the solutions found in *Quest For Clues* such as for *The Pawn*, *Phantasie I*, *II*, and *III* are exclusive, found nowhere else. It also includes over 80 detailed maps. Origin Systems, 136 Harvey Road, Building B, Londonderrey, NH 03053, (603) 644-3360.

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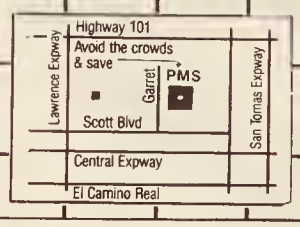

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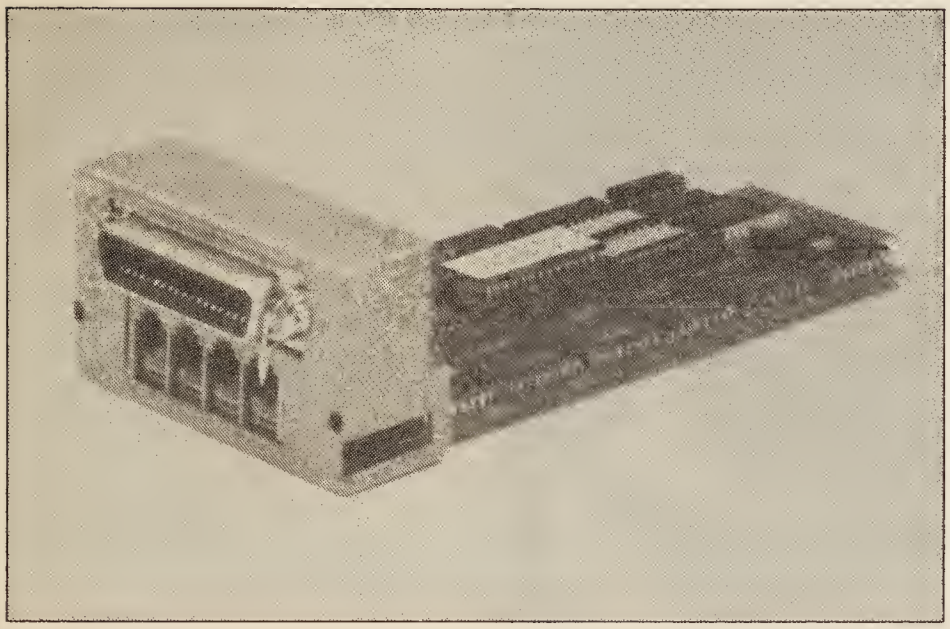

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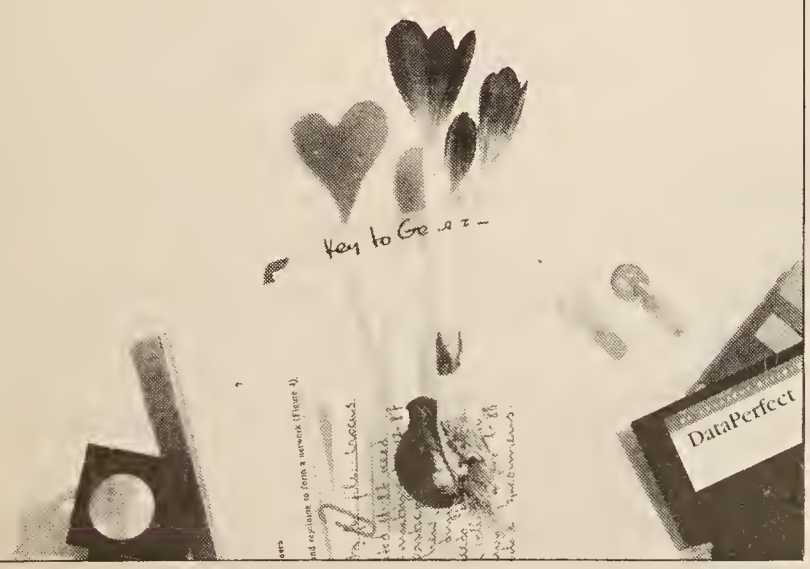

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Introduction To Shareware

By David T. Anderson and Charles Seiter

Since the software discussed in "Up and Running in 15 Minutes" is marketed exclusively as "shareware," it is appropriate to explain what the term shareware means and how users benefit from this marketing approach.

Try It, You'll Like It

Shareware authors are special; they pride themselves on the quality of their products, not the quality of their advertising. In fact, shareware distributors are so confident in the quality of their products, they ask potential users to test software — before purchasing. These full-version software gems are available on a trial basis at minimal cost (usually about $6.00). If you don't want a software application, don't use it and don't register it. Both consumer and author benefit from this marketing strategy. For the author, there is no better method of insuring customer satisfaction and rapid distribution through the market — faster than equivalent commercial products. For the consumer, desired software can be obtained quickly, with a minimal capital outlay. If the software doesn't perform as expected, little is lost. Making the same mistake in the commercial marketplace could be financially devastating.

In a sentence, shareware is a futuristic marketing technique that promotes product quality, not abusive advertising. Yet the marketing technique is sufficiently revolutionary to warrant further explanation; so let's reiterate:

Shareware is an alternative for seasoned consumers wanting well-designed, thoroughly tested, yet inexpensive software. Shareware sells itself on its own merits, not on glossy datasheets. But the greatest asset is that you can take your time (a month, if necessary) and experiment with the package: See if it will handle a 50-page document. More importantly, see if you like the feel of the package and how it interacts with other packages in your library. Use the software extensively, in a variety of environments—then decide whether to buy.

If you don't like a shareware product, you don't have to return the product to get your money back; you don't have to write nasty notes expressing your dissatisfaction; you don't even have to harangue the distributor on the telephone. If you don't like the software, you simply erase the disk and use it to store other files.

However, if you like a particular shareware package and decide to include it in your library, simply send the author the requested "registration fee." In return, you will typically receive telephone support (from the author) and a detailed reference manual.

No More Middleman!

When you first step into the shareware world, you'll be hesitant and skeptical:

How can something that costs practically nothing be so powerful?

Remember, shareware is not free! You have an unlimited right to try the software and distribute it to friends who also might be interested. But when it comes to purchasing, you have a moral obligation to pay developers for their work. Even so, when you compare the price of super-quality shareware packages you will discover something more radical than using software before purchasing it: you can purchase an entire library of superb quality software without ending up in the poorhouse! In this consumer society, it is possible to own all the software you could possibly need — as long as you don't insist on buying it untried, still in its shrink-wrapped package off the shelf of a computer store. The reasons for the tremendous savings on shareware are simple. First, shareware is marketed to an enormous user community which would not likely be tapped through traditional advertising techniques. Second, there are no middlemen in shareware. Expanded distribution and low overhead allow authors to give you a considerable price break.

Expedient Software Purchasing

All the benefits of shareware marketing necessitate that it be sold through different channels — some of which you may not be familiar with.

Typically, shareware is distributed through user-group catalogs, bulletin boards and, more recently, through company-wide software repositories (such as futuristic CD-ROM shareware collections). Often it is important for users to rely on a support group (such as PC-SIG of Sunnyvale, California, or PC-Blue of New York City) in order to distinguish the software they desire from among the plethora of available shareware applications.

Tested is Better

There are some very simple things

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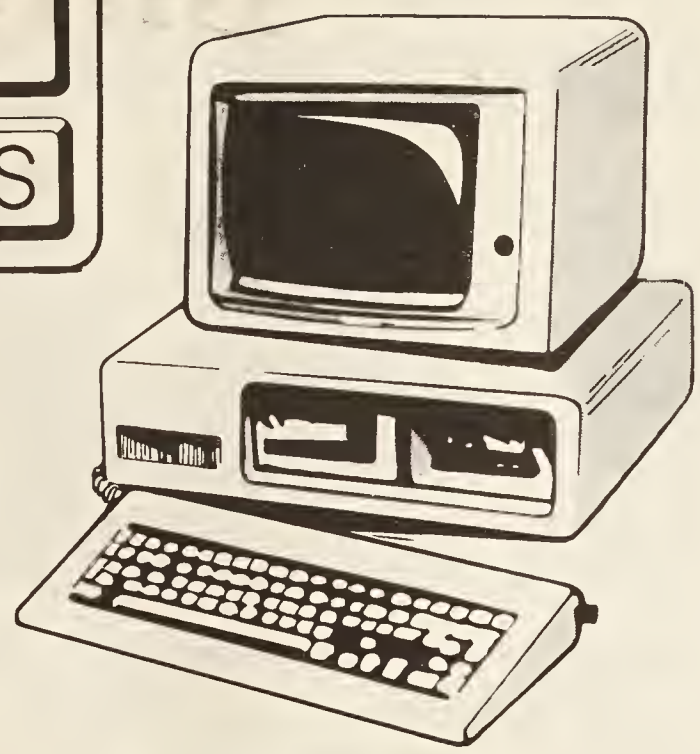

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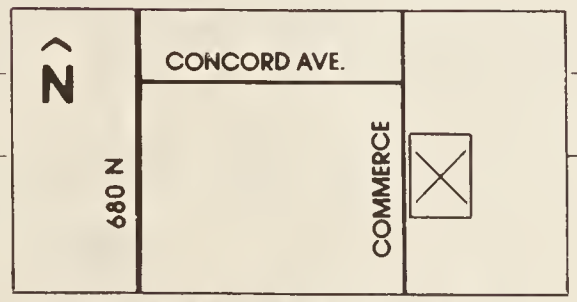

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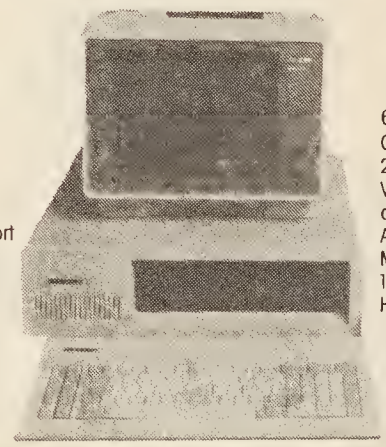

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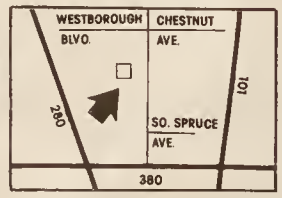

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we can tell you about software. First, source-code doesn't decay with age. The best packages have been developed and redeveloped — some over a period of many years. Unlike commercial software, shareware has been beta tested for years by thousands of individuals, not just a few individuals at a few select sites. Virtually every registered user beta tests shareware. Comments and suggestions from shareware users are regularly incorporated in product updates. And registered users are the first to receive information about the latest and greatest version of any given shareware product.

Use Standard Software Standards

There are a few format rules in the software world. For instance, in the field of word processors, ASCII is king. The non-standard, high-bit characters generated by such dinosaurs as WordStar are difficult to assimilate into other packages. Similarly, even though DBase III is somewhat antiquated, there are few serious database files that have not adapted dBASE file compatibility. When you use a package such as PC-File+, you have the ability to port your database to and from DBase, making it accessible to thousands of compatible software packages.

Stick with standards and your important data won't be limited. The shareware discussed in this book adheres to industry and popular standards — your files should be accepted by most commercial programs.

Authors

Pioneered by Andrew Fluegelman. Credited with originating the shareware marketing concept is the late Andrew Fluegelman, founder of *PC World*. Fluegelman compared his concept with public television and public radio, both of which urge users to support future programming through their contributions. Supporters of public television and radio traditionally receive a programming schedule and a free T-shirt or monogrammed umbrella (if you live in the Pacific Northwest). Fluegelman coined (and copyrighted) the term freeware to describe a method of software distribution. His company, Headlands Press, produced the first successful shareware product, PC-Talk (a telecommunications package which has been overtaken by much more powerful modern packages like PROCOMM). Presently, there are more than 10,000 registered owners of PC-Talk.

Quicksoft. One of the most successful shareware products is *PC-Write*, a full-featured word processor published by Quicksoft of Seattle. Quicksoft is proof that shareware is no small business. *PC-Write*'s author, Bob Wallace, jumped ship from Microsoft and started Quicksoft in January 1983. He originated *PC-Write* as shareware because he felt it was the best way to encourage people to try it. Nearly 200,000 copies of *PC-Write* have been distributed through Quicksoft.

Quicksoft encourages dissemination through a single-level sales pyramid. If a new user registers a copy of *PC-Write* which already has a registered serial number, the original holder of that serial number receives a $25 commission. The new registrant then receives a new serial number, etc. Wallace estimates that about one of every six registered owners receives a commission. Quicksoft has been particularly attuned to the corporate client (for example, several thousand manuals were sold to Seattle's biggest employer — Boeing as well as the Los Angeles *Times*).

Buttonware. Another Seattle-based shareware company, Buttonware, has annual sales exceeding $2 million and more than 500,000 users. Buttonware (see *PC-File+*, and *PC-Calc+*) also has offices in Europe and is probably the largest shareware-based corporation in the world. Other Buttonware products include a telecommunications program (PC-Dial), a readability checker (PC-Style), and a computerized tickler system (PC-Tickle). Jim Button, chief programmer and shareware pioneer, was responsible for products released just after the first IBM-PC hit the market.

DataStorm Technologies, Inc. Bruce Barkalew and Tom Smith wrote an excellent shareware telecommunications program in their "spare" time. Now, it is the most widely distributed shareware telecommunications package — PROCOMM. Datastorm Technologies, based in Columbia, Missouri, has sold well over 40,000 copies.

Barkalew and Smith now have a six-person staff, which gives them time to make revisions in their program and to plan other products.

Brownbag Software. Silicon Valley's own John Friend is the author of PC-Outline, a well-designed, memory-resident outlining program. Friend is one of several shareware authors who have sold their software outright to Brownbag Software. Another Brownbag Software application covered in this edition of "Up and Running" is PowerMenu.

OMNIVERSE. Founded by Bob Foster and Steve Schauer, this shareware group became a smash hit in the schools with their word-processor GALAXY. Foster and Schauer are scheduling several follow-on packages for the educational market.

Magee Enterprises. Marshall W. Magee's ten years of programming and software design resulted in AUTOMENU, one of the biggest shareware hits ever. Mr. Magee is Vice-President of the Atlanta IBM-PC Users' Group and Chairman of its Programmers' Special Interest Group which discusses the technical aspects of DOS and programming. Currently, Mr. Magee teaches at Georgia

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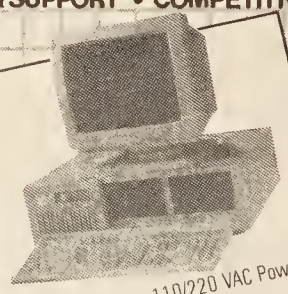

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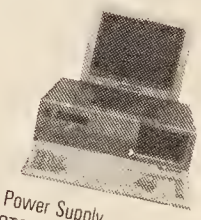

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Tech Computer Institute. Magee Enterprises is located in Norcross, Georgia, a suburb of Atlanta.

Association of Shareware Professionals. In May 1987, a group of shareware authors organized the Association of Shareware Professionals (ASP). If you want information on shareware, these are the folks to question! Co-chairmen of this veritable powerpack of shareware professions are Jim Button and Bob Wallace. The goals of ASP are to inform users about the shareware marketing concept, set standards for authors, establish guidelines for disk dealers who elect to follow ASP standards, and help authors market their products in a professional manner. As a minimum requirement, applicants for membership in ASP must agree to abide by ASP standards, including full disclosure of any known incompatibilities in their programs and acknowledgment of user registration.

The organization conducts continuous electronic meetings on a forum of CompuServe's IBMNET, which is open only to members of ASP. Membership applications may be downloaded as *Applic.*FRM from Data Library 8 of the IBM Software Forum or may be obtained by writing to:

ASP Membership
11058 Main Street, Suite 225
Bellevue, Wash. 98006

The official ASP definition of shareware is: "Shareware distribution gives users a chance to try software before buying it. If you try a shareware program and continue using it, you are expected to register. Individual programs differ on details. Some request registration while others require it; some specify a maximum trial period. With registration, you get anything from the simple right to continue using the software to an updated program with printed manual. Copyright laws apply to both shareware and commercial software, and the copyright holder retains all rights, with a few specific exceptions as stated below. Shareware authors are accomplished programmers, just like commercial authors, and the programs are of comparable quality. (In both cases there are good programs and bad ones!) The main difference is in the method of distribution. The author specifically grants the right to copy and distribute the software, either to all and sundry or to a specific group. For example, some authors require written permission before a commercial disk vendor may copy their shareware."

ASP's primary goals are:

- To inform users about shareware programs and about shareware as a method of distributing and marketing software;
- To encourage broader distribution of shareware through user groups and disk dealers who agree to identify and explain the nature of shareware;
- To assist members in marketing their software;
- To provide a forum through which ASP members may communicate, share ideas, and learn from each other; and
- To foster a high degree of professionalism among shareware authors by setting programming, marketing and support standards for ASP members to follow. □

Shareware Classics

PC-FILE+ *PC-FILE+* is a database manager that can read *dBASE* files. Written By Jim Button and produced by ButtonWare Inc., Box 5786, Bellevue, WA 98006.

PC-CALC+ *PC-CALC+* is a spreadsheet program that offers many capabilities of *Lotus 1-2-3*. Also written by Jim Button and available from ButtonWare Inc., Box 5786, Bellevue, WA 98006.

PC-Outline! *PC-Outline!* is an outline processor from Brown Bag Software, P.O. Box 60000, San Francisco, CA 94160-1719. (800) 523-0764, (800) 323-5335 in California.

ProComm ProComm is the most popular communications shareware program. It is available from Datastorm Technologies Inc., P.O. Box 1471 Columbia, MO 65205. Support BBS: (314) 449-9401.

PC-WRITE *PC-Write* is one of the first and most famous shareware programs. The makers of *PC-Write*, Quicksoft, have distributed over 200,000 copies of this word processor. Written by Bob Wallace and available from Quicksoft, 219 First North #244, Seattle, WA 98109. (206) 282-0452.

GALAXY *Galaxy* is a fast word processor that has been highly recommended for beginners due to its simplicity. Written by Steve Schauer and Bob Foster and distributed by Omniverse, P.O. Box 2974, Renton, WA 98056. (206) 228-7627.

PowerMenu PowerMenu is a menu-driven software management utility and DOS shell. It is available from Brown Bag Software, P.O. Box 60000, San Francisco, CA 94160-1719. (800) 523-0764, (800) 323-5335 in California.

AUTOMENU *Automenu* is a program that lets users organize software, batch files and DOS commands through menus the user creates. Written by premier shareware developer Marshall Magee and distributed by Magee Enterprises, 6577 Peachtree Industrial Blvd., Norcross, GA 30092-3796. (404) 446-6611.

All the above infarmotian was callected fram the baak Up And Running In 15 Minutes, written by David Tams Anderson and Charles Seiter and published by PC-SIG, 1030 East Duane Ave., Suite D, Sunnyvale, CA 94086. (408) 730-9291.

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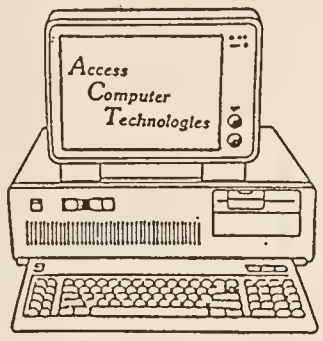

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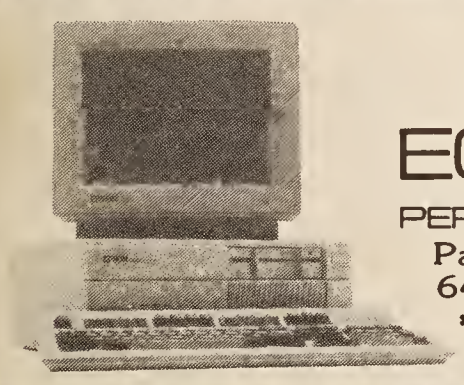

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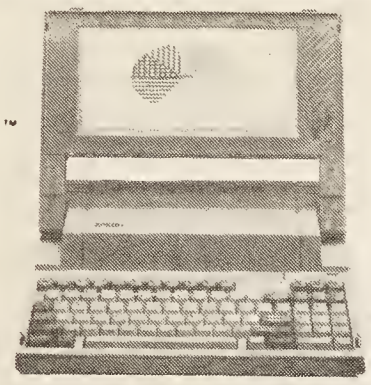

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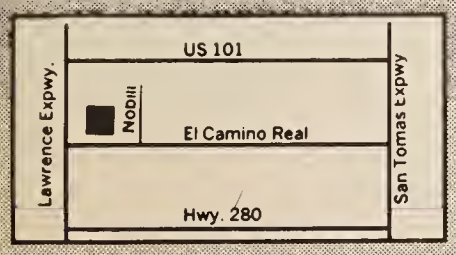

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XyWrite III Plus

By John F. Lowan

When evaluating any tool, whether software, hardware or mechanical, two questions must be considered: 1) What does it do? and 2) How does it do it? These questions loom especially large when you entertain the thought of changing word processors. New capabilities (What it does) usually provide the incentive for change, while the effort of learning a new user interface (How it does it) roots us to the familiar.

Some time ago, I became completely dissatisfied with the limitations of *WordStar Version 3.3* and began investigating a variety of advanced word processors, including *WordPerfect*, Microsoft *Word* and *WordStar Professional*. *WordStar Professional* felt right, but it was slow and lacked many useful features such as windowing. The others were loaded with features, but didn't feel right. Eventually I decided to review *XyWrite III Plus*, the latest offering of XyQuest, Inc., because of its reputation as a fast, versatile, full featured word processor. I was also curious about its in-group following (John Dvorak is among its promoters).

Interface

Inevitably, question two rears its head first. No matter how useful the writing tool, it is bound to impede somewhat the process of capturing fleeting ideas and words. Since I work extensively with fast and convenient program editors, which minimize this problem, I was interested in finding comparable performance in a word processor.

Initially, I was unhappy with *XyWrite*'s human interface. Its screen presentation is unattractive and its key assignments were unfamiliar. *XyWrite*, however, is highly configurable, and after a few hours with the manual, I was able to set up the keyboard to my satisfaction. While it is not perfect, I like *XyWrite*'s (personalized) human interface and find that it interferes with my thought processes only minimally. Here's why:

1. *XyWrite*'s human interface is intelligently designed and easy to use, providing both screen and command modes. In screen mode, dedicated keys (alone or in combination with Ctrl, Alt or Shift) control simple operations which directly affect the text being edited. For example, cursor movement, block definition, text move and a variety of delete operations all have dedicated key assignments. Parameter intensive, file oriented or complex operations are done from a command line at the top of the screen. Striking F5 (Function key 5) takes the cursor to the command line, Typing an explicit command, such as **call file.ext<CR>**, to begin editing, or **store<CR>**, to finish, causes the commanded operation to be performed. This approach soon becomes faster and more satisfying, for instance, than Microsoft *Word*'s cumbersome menu system. It does, however, require memorizing text commands, although the task is simpler than memorizing *WordPerfect*'s numerous and somewhat disorganized key commands.

2. Paragraph reformatting is automatic, continuous and speedy. At the paragraph level, you are always looking at what will be printed.

3. Hyphenation is automatic, transparent and correct. The result is a more professional document with no extra effort.

4. Choosing the mouse option (regardless of whether a mouse is employed) allows the cursor to roam across the entire screen. Instead of being pulled to the left when a blank or short line is encountered, the cursor moves straight ahead, in the vertical as well as the horizontal direction.

5. Since all but the longest document files are memory resident, most operations are very fast; they also require few key strokes. Consider text moves. First, place the cursor at the head of the block of text to be moved and strike F1; then go to the end of the block and strike F1 again. The block is now defined and highlighted. Place the cursor at the destination and strike F8; the block is immediately moved and the document fully reformatted. F7 causes the block to be copied instead. Single keystroke block definition is provided for words, lines, sentences and paragraphs.

Finally, I was able to fully hide embedded commands. *XyWrite* document files are entirely ASCII; however, most formatting commands, such as margin definition, centering, underlining and mailmerge control, are embedded in the text. Three possibilities are provided for display of embedded commands on screen. In normal mode, embedded commands are indicated by a bright triangle (and hard carriage returns by a left arrow). In expanded mode, they are displayed fully, as entered, and may be edited just like text. In invisible mode, embedded commands and hard carriage returns are not displayed. Hiding or unhiding embedded commands while editing is bothersome, because control of this capability is not systematic. Some operations are assigned dedicated keys, others aren't and some affect unrelated features. For example, invoking the expanded display removes the page and line number from the status line.

Performance

Turning to our first question, "What can *XyWrite* do?", the answer is "Just about anything which could be expected of a word processor!"

In addition to standard editing capabilities, the newly released Version III Plus offers a comprehensive spell checker and thesaurus, as well as a versatile word counter, all surprisingly easy to use. To spell check the whole document, activate the command line and type **spell <CR>**. The checker stops at each word not in its dictionaries and displays possible correct spellings. A menu allows you to select one of the alternate spellings, accept the questionable word and continue, or accept the word and enter it in a temporary or personal dictionary. Automatic spelling correction is an option for consistently misspelled words. This feature may also be employed to automatically expand abbreviations into their full spellings. Other conveniences include file storable text macros (called save/gets) and programmable command sequences.

XyWrite supports multiple editing windows, allowing up to nine documents to be edited at once. Information can be transferred from one document to another or two documents can be compared. When comparing, single keystroke commands cause the cursor to stop at the point in both documents where they begin to differ or where they again match. Window handling is one of the few menu driven *XyWrite* capabilities; it is a very useful feature with a somewhat cumbersome implementation. The search and replace functions, also versatile, are also awkward. They are the only *XyWrite* capabilities I found which clearly suffer as a result of being controlled from the command line.

XyWrite provides a near overwhelming array of document formatting features, including page layout, footnotes, headers and footers, multiple columns, outlining, style definitions and printable graphics file inclusion. Page layout is somewhat confusing, mostly because it is so versatile. The default page format provides no margins, thereby forcing the new user to tackle the problem head on. In contrast, *XyWrite*'s style definitions (sets of formatting commands which can be invoked by a single embedded command) are easy to work with, much easier than Microsoft *Word*'s. This application seems more naturally controlled from the command line than from a menu.

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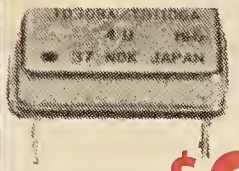

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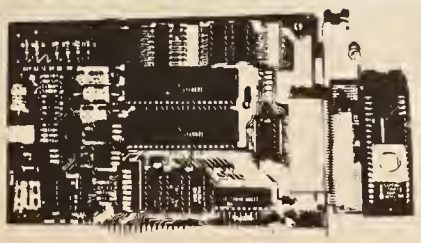

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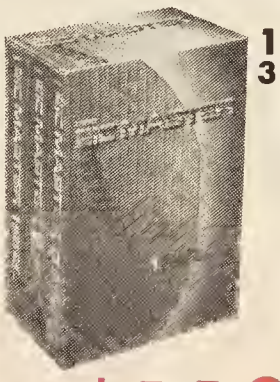

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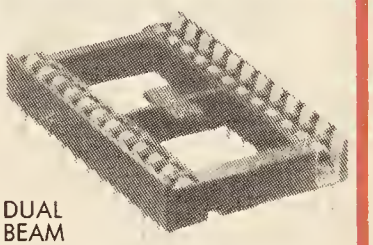

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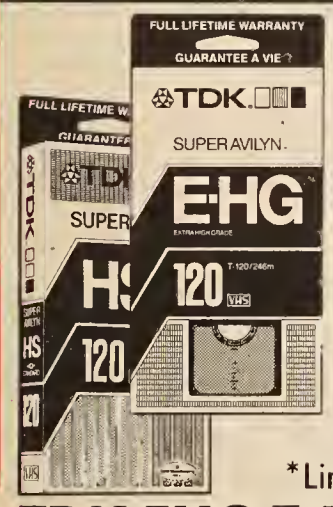

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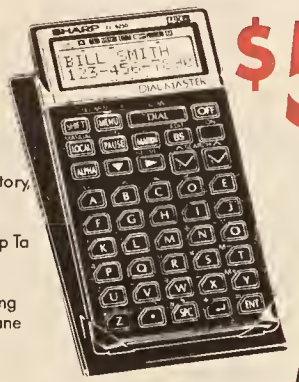

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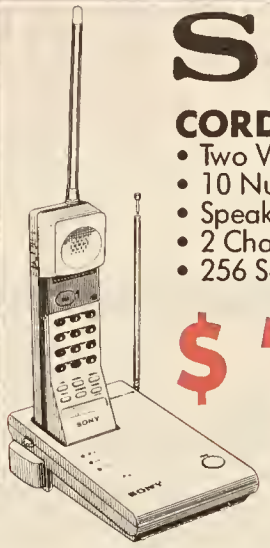

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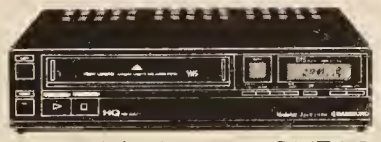

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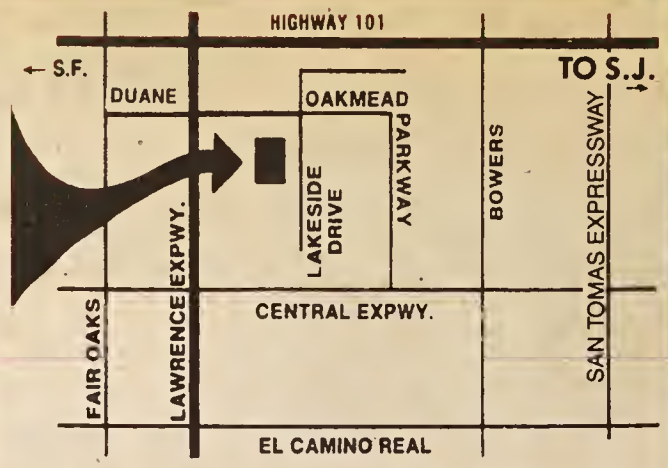

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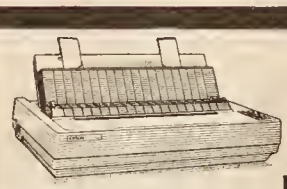

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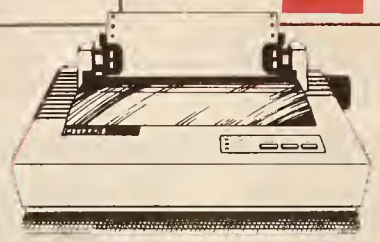

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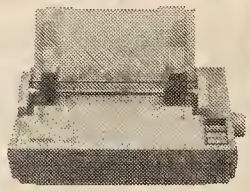

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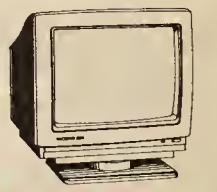

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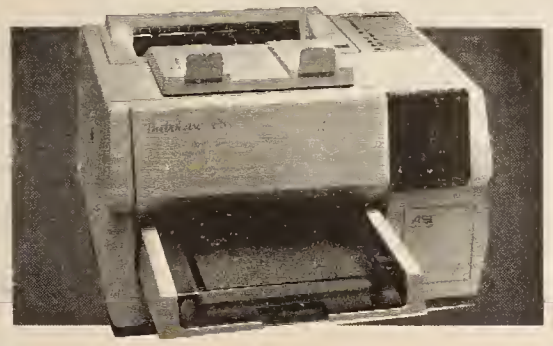

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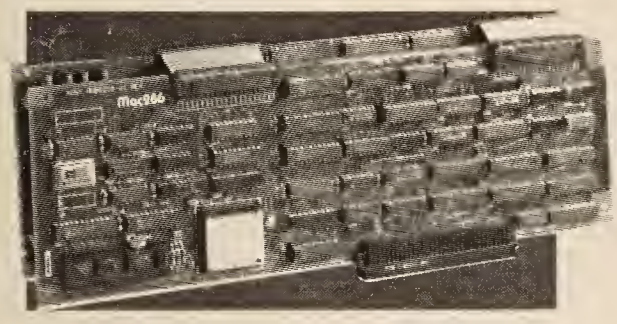

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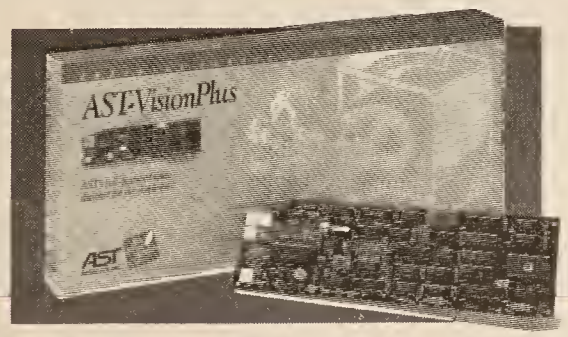

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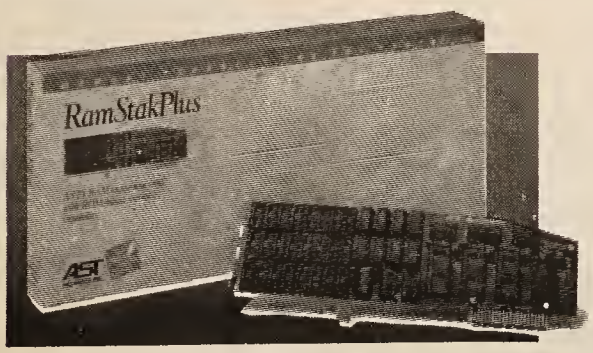

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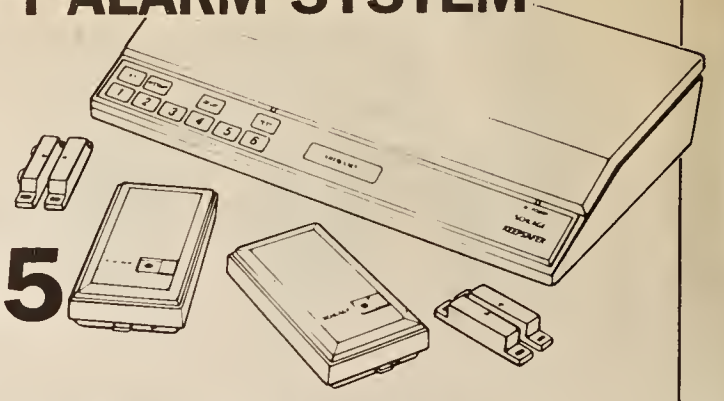

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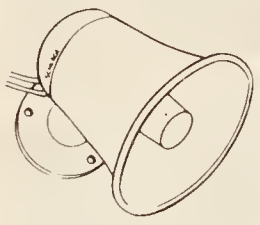

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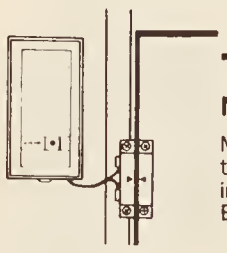

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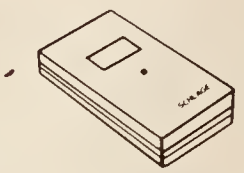

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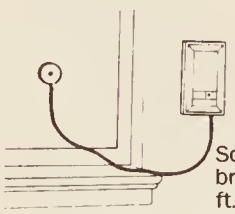

GLASS BREAK DETECTOR
MODEL NO. 71-113

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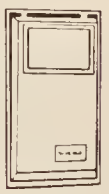

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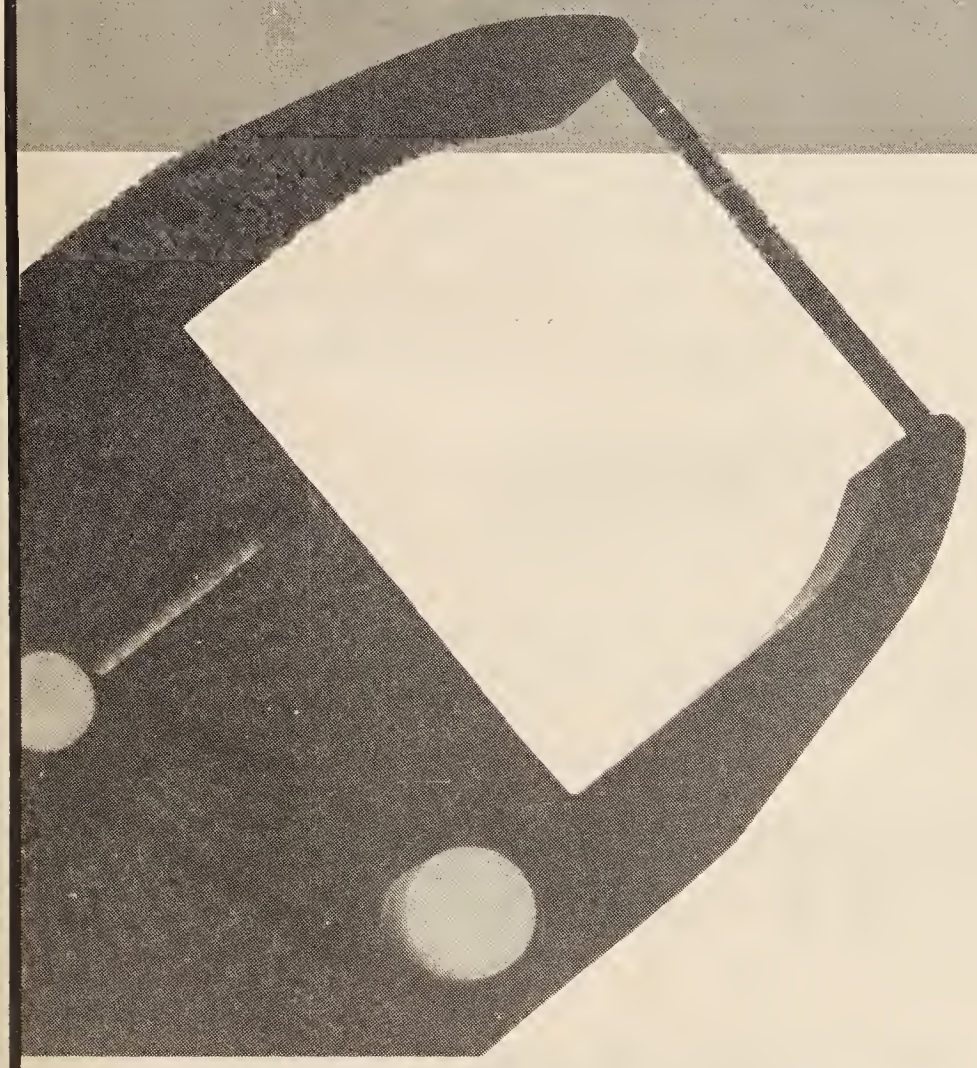

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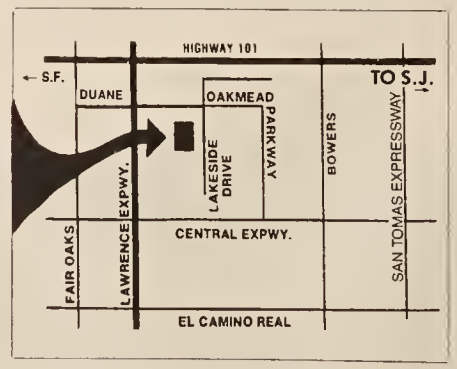

capable of multiple type fonts, variable line spacing and micro-justification. Printer control files are provided for more than 150 different printers. These files are editable and may be augmented to exploit some of the more esoteric features of your printer. As provided, the Okidata Microline 92 control file did not allow use of that printer's near-letter-quality mode. I solved this problem by adding an additional font to the file. Messing with printer control files is not an activity for the faint hearted, it requires computer experience and heavy reference to the manual.

XyWrite's formatting and printer support capabilities are sufficient to handle almost any utility desktop publishing task — where "utility" means "short of bitmapped graphics." XyQuest seems to be moving its word processor toward full desktop publishing capability. This is not surprising since XyQuest is a spinoff of Atex, Inc., a company which makes minicomputer based text preparation systems for newspapers and magazines. The two organizations have recently agreed to share expertise in future projects.

XyWrite's document preparation features include mail merge, fill-in forms, tables of contents, indexes, redlining and background notes. Redlining is a new feature of Version III Plus, which, when activated, displays inserted material in bold and "deleted" material in reverse video. When printed, the new material is bold and the deleted struck through. This feature allows one person to modify a document and another to quickly evaluate the proposed changes. Background notes are a part of the document but are embedded and not visible on the screen unless called for; they are not printed.

Mail merge is the classic document preparation function. It has proven to be an effective benchmark for evaluating the overall quality of a word processor's advanced capabilites. *XyWrite*'s mail merge facility is both powerful and easy to use, in part because it is fully command driven. Using **types**, the type-to-screen command, merged documents (or any documents, for that matter) may be previewed on screen just as they will be printed; this saves a lot of hassle and paper. A useful figure of merit in evaluating mail merge implementations is the number of merged documents needed to justify the extra effort of designing a document file and preparing data records. The number for *XyWrite* is somewhere around four; for *WordStar*, with its dot commands, approximately seven, and for Microsoft *Word*, with conditional testing of data fields, ten.

Documentation

XyWrite's documentation is top notch and its on-line help services are acceptable. Five documents are provided: an installation guide, a quick-start tutorial explaining rudimentary document entry and printing, two half-inch thick wire bound tutorials, one for basic editing and the other for advanced features, and a hefty reference manual. The reference manual is well laid out, with individual sections for file operations, editing, formatting, special features and customization. Each topic or operation is explained by example before its associated commands are specified in detail. This cuts significantly the time required to learn new features. A complete index makes effective use of the reference manual easy; I eventually put it at the head of the manual because I referred to it so much.

The menu driven on-line help system is easy to use, but nowhere near sufficient for learning the program from scratch. On-screen help is accessible alphabetically, by key, by command, by function code or by keyword. Keyword access means you can type "delete" and get a help screen explaining all delete operations. I wish the help system offered much more information as well as a more extensive list of keywords.

Conclusions

XyWrite's problems fall mostly into the category of irritants. For instance, most word processors define a default disk for their own file references, while *Xywrite* changes the DOS default. When you exit, the new default setting remains. Scrolling is not smooth, either in the vertical or the horizontal direction and line deletion is slow, one of the few operations which can be outrun from the keyboard.

A generic problem with very powerful computer programs is the difficulty of remembering infrequently used commands; *XyWrite* is no exception. It's well-organized reference card helps a lot. The most serious defect I noted, however, was the complexity of customization, including the lack of a comprehensive, easy to use configuration program. As it is now, access to *XyWrite*'s great flexibility is limited to experienced users or beginners with a bit of the hacker in their blood.

As for *XyWrite*'s ingroup appeal, I get it. *XyWrite* was designed with writers in mind. It enables us to get work out with a minimum of keystrokes, and it avoids irksome characteristics like slow response, manual reformatting, layers of menus, restricted cursor movement and borders around the screen. This program is not for the pull down menu crowd: if the thought of a command line puts you off, look elsewhere. I found *XyWrite* to be powerful, flexible, convenient and very fast; I intend to continue using it.

XyWrite requires an IBM PC or compatible with at least 348K of memory (256K without spell correction) and two disk drives. The lack of a hard drive does not slow it down. Version III Plus costs $445 and is available from XyQuest, Inc., 3 Loomis Street, Bedford, MA 01730. Telephone (617) 275-4439. □

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WordStar 2000 Release 3 Personal Edition

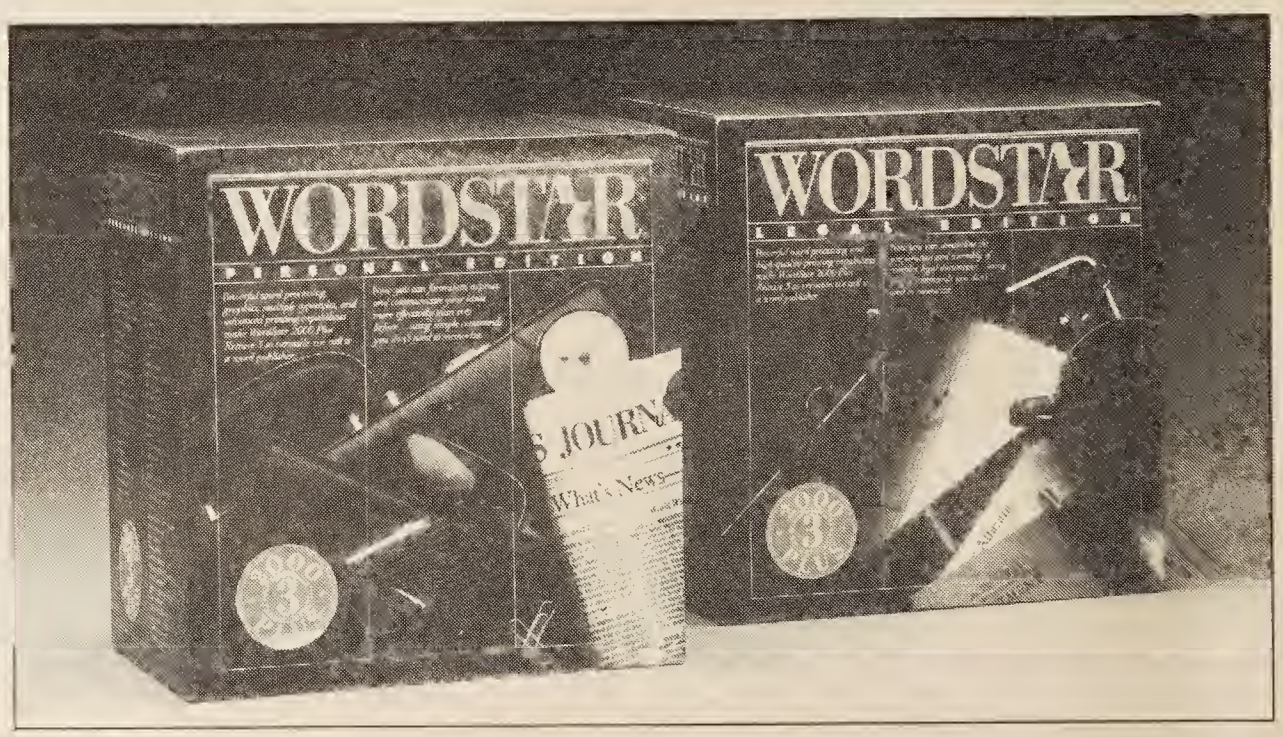
Here It Is. All 21 Disks' Worth...

By Woody Liswood

With 21 disks in the package, WordStar *2000 Release 3* really does it to your hard disk. However, don't panic; you don't need to use all of them. Most of the disks contain auxiliary programs which run inside or outside of WordStar itself, and help turn it from just a word processor to a very effective writing and semi-desktop publishing environment.

With this release, MicroPro appears to have changed its support policy. WordStar *2000, Release 3* has a toll free telephone number, with support seven days a week for the life of the product release plus 90 days.

In addition to the 21 disks, there are three volumes of documentation. There's a tutorial, as well as a reference guide for all of the programs and functions found in this word publishing environment.



WordStar 2000 Release 3 is the massive professional version of the ever popular word processor.

What's On All Those Disks?

Two of the disks contain the printer library. WordStar *2000 Release 3* seems to support almost every printer ever manufactured, and offers superb support for laser printers (both HP and PostScript varieties).

Another group of the disks contains a program called INSET. This nifty package does three things. First, it contains a Terminate and Stay Resident (TSR) program which will capture text and graphic screens and place them into files. Second, it will then let you edit those images. The editing is done at the "BIT" level. Third, and most important, it will then insert those images into the WordStar *2000 Release 3* document during printing. The program will also place the text around the image almost as if you were in a page description-desktop publishing program.

Telecommunication features are also included. There is a healthy script language to help you automate your telecommunication needs. The program supports XMODEM and CIS B protocols, as well as text transfers. Since WordStar *2000 Release 3* uses a binary file format with its own unique headers, you must transmit the file using a protocol. If you want to just transmit it as an ASCII file, you could first print it to disk, then send it. But if you print it to disk, you get headers, footers, page offsets and everything else in the file. The internal telecommunications program, however, knows when you are transmitting a WordStar *2000 Release 3* format file, and will automatically strip out all that garbage for you and send only pure unformatted ASCII characters.

The telecommunications program comes with a number of built-in defaults for the popular communications services. You would edit the file to insert the appropriate telephone number, ID and password, and the program does the rest. However, the default for CompuServe was not set up appropriately. You will need to modify the defaults to be able to log on correctly. In the TELMERG.SYS file, add:

Bit 7
Parity Even
ATDELAY 20.

This, then will allow logon to CIS automatically.

The ATDELAY will also need to be added to any TYMNET logon sequence. ATDELAY tells your PC to delay the start of the script for a specified time after receiving the connect signal. For networks which require that you signal them after the connect, your signal will be delayed until the network is ready to receive it.

Another group of disks contains a thesaurus and a dictionary. Both work from inside WordStar and are well integrated into the program. The spelling checker still does not identify double words, one of the more common typing errors. Nor does the program give you a large list of words to choose from when it displays the possible substitutes for your questionable word. And, lastly, it does not recognize when you have inadvertently left out the space between two words and give you a suggestion for the correct spelling of the words correctly split apart. The checker only displays a single potential correction at a time. You must press N to see the next potential solution to the spelling problem if you don't like the first.

It's too bad that after all these years, the WordStar spelling checkers haven't yet become as good as Webster's *New World Spelling Checker*. It's not that the WordStar checkers don't work; they do. It's not that the checker isn't fast; it is. It's not even that it isn't usually correct in the first suggestion; it is. It's just that it could be so much better if it did all the rest in a more user-friendly way.

Another disk contains *PC Outline*, a TSR program which allows you to create and manipulate outlines. *PC Outline* has been an outstanding shareware program for the past few years and is an acceptable alternative to the more expensive commercial outlines such as *Ready* and *Think Tank*.

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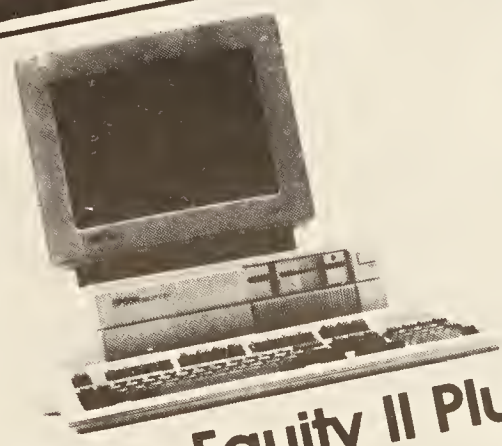

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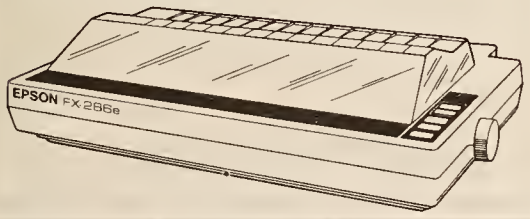

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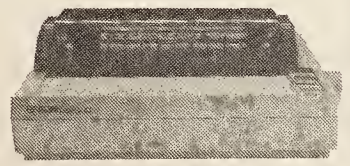

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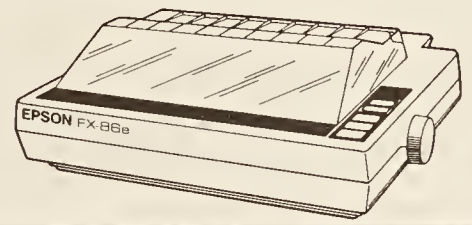

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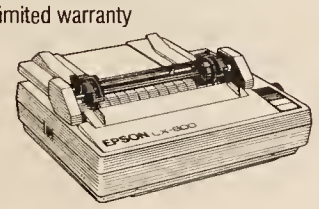

LQ-850

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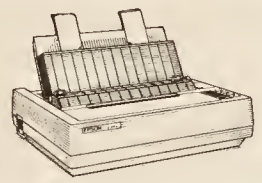
- SmartPark,™ Epson's unique paper handling feature, lets you change from fanfold paper to single cut sheet paper or envelopes without removing the tractor hardware or paper
- 264 Characters per second in the high-speed draft mode delivers outstanding productivity
- 88 Characters per second in Letter Quality mode for enhanced, high-resolution characters
- In draft mode or letter quality mode, the LQ-850 runs at a surprisingly quiet 55 dB noise level
- Exclusive SelecType front control panel offers quick, easy selection of popular typestyles, fonts and pitch
- The LQ-850 is backed by Epson's one year limited warranty



LQ-1050

- Epson's 24-pin, dot-matrix technology creates true letter quality characters
- SmartPark,™ Epson's unique paper handling feature, lets you change from fanfold paper to single cut sheet paper or envelopes without removing the tractor hardware or paper
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- In draft mode or letter quality mode, the LQ-1050 runs at a surprisingly quiet 55 dB noise level
- Exclusive SelecType front control panel offers quick, easy selection of popular typestyles, fonts and pitch
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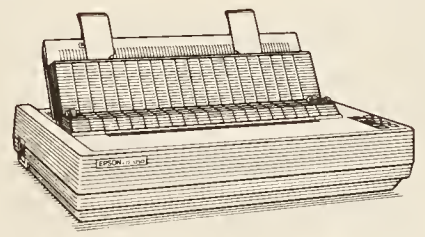

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- Prints 108 characters per second printhead speed (12 CPI) in Letter Quality mode.
- SelecType III front panel control with 20-character LCD displays, prompts, confirms and stores up to 14 printer functions in any of four memory cells
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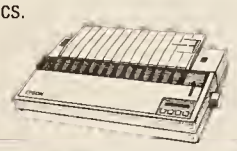

Another disk contains a "*Fill-a-Form*" program. This lets you create forms, which are then completed and printed for you. It also allows you to create the proper image for your reprinted forms, then completes them for you based on operator input.

ShowText is another of the goodies contained in the package. This program creates display quality graphics for screen, paper, or overhead transparencies. Although functional, this program is not as complete or as useful as most of the standalone business graphic programs you could purchase in any computer software store.

FileLocator, still another program, lets you find a particular file regardless of where on the hard disk it is located. It searches all directories and subdirectories based on the criteria which you supply to it. It will also search inside of files to find a specified string of characters.

WordStar 2000 Release 3 contains a built-in mailing list database manager called *Mail List*. It is essentially identical to the Mail List Manager Pro Solutions package for *InfoStar+*. In *WordStar 2000 Release 3*, the field sizes have been changed for on-screen usage. To use files created with older versions of *WordStar 2000* or with the *InfoStar+* Pro Solutions Manager, you will need to rename them to meet the current conventions. They will, however, work without modification.

Another group of programs is *Convert*. *WordStar 2000 Release 3* will convert files back and forth between itself and regular *WordStar*, ASCII, IBM DCA RFT and FFT, *WordPerfect*, *MultiMate*, *Microsoft Word*, and *DisplayWrite*.

The *WordStar 2000 Release 3* program takes up a disk, and the install program and associated files also take up a disk. That's it for the 21 disks.

Do I Need All That Stuff, And Does It Work?

After three months of working with the program I can say that I have kept INSET for graphic insertion, the dictionaries and the thesaurus, the mailing list manager and the telecommunications section. I have removed *Fill-a-Form* and *ShowText* from my disk, since there are better programs (in my opinion) available commercially. *PC Outline* stays on the disk, but is rarely used.

WordStar 2000 Release 3 has had a reputation as a slow program, but on my ALR 386 computer it flies. Also, new algorithms format the screen first, then do the rest of the changes in the background so that the program appears much faster and responsive to the user than older versions. Because of this, you should not remove any disks or just shut off the computer while working until you are certain that *WordStar 2000 Release 3* has completed all of its operations.

To speed things even further, *WordStar 2000 Release 3* has a cruise control built into the system. You can control the speed at which the cursor moves around the screen. I found that with my 16MHz 386 box I had to slow the cursor down, since it was moving faster than I could keep it under control.

Ease of use has always been a concern with word processors. *WordStar 2000 Release 3* was designed specifically to address users' concerns about the original *WordStar* program. Everything is mnemonic. However, the traditional *WordStar* cursor control diamond is still supported — with one (in my opinion again) glaring problem. A Control-G now enters the graphic mode to insert graphics captured with INSET rather than deleting the character at the cursor. That one habit is hard to break for old *WordStar* users.

WordStar 2000 Release 3 also comes with a *SWITCH.COM* program to switch the caps lock and control key keyboard codes. So if you're stuck with these new and poorly designed keyboards which take the control key away from its time-honored position next to the A key, it can be put back where it belongs.

If you don't want to remember the logical and mnemonic codes, the entire program can operate from function keys. Then you would have to learn and remember function key sequences with control keys and shift keys and ALT keys — something like the crazy and non-logical way *WordPerfect* operates...

There is one minor anomaly with the ALT-key defaults which should be fixed. *WordStar 2000 Release 3* supports the IBM BOX drawing character set. However, the whole set is not available in the ALT-KEY sequences. Pressing ALT and the top row of the keyboard gives you an additional row of macros, as if you had another function key row. However, the 1, 2, 3, 4, and 5 keys give indents rather than box drawing characters. 6, 7, 8, 9, 0, and -, give you the corners, the horizontal and vertical line. I used the modification program to change that. I eliminated the indents, since I find it easier to use the control key menus within *WordStar Release 3*. Then I added all the rest of the characters necessary to have a full box, with crossed lines and lines which start or end on the sides or top.

The WSINSTALL program gives you control over almost every potential feature in the program and lets you customize to your heart's content.

WordStar 2000 Release 3 has had a reputation as a slow program, but on my ALR 386 computer it flies. Also, new algorithms format the screen first, then do the rest of the changes in the background, so the program appears much faster and responsive to the user than older versions.

With printers, *WordStar 2000 Release 3* really shines. It supports *correct* proportional spacing. That is, it counts the character widths on a line and within a paragraph, and spaces the line by what it needs. Many of the other word processors take the on-screen line, proportionally space a single word, then add space between words to justify or complete the line. *WordStar 2000 Release 3* puts as many characters on the line as possible for the font you are using, which gives for a real typeset look when used with, for example, the Times Roman B cartridge font on a HP LJ II.

You also have complete control over the printer tables and defaults, and can customize *WordStar 2000 Release 3* to support any printer, laser printer, font cartridge, or downloadable font cartridge you like.

WordStar 2000 Release 3 also uses LIM expanded memory. It does not keep text up there, but keeps some overlay files which make the program run faster during reformatting, scrolling and other block operations.

The new version features a Page Preview function. Pressing ALT-= brings up a graphic screen, with your current document displayed as greeking, but with the proper sizing. You can see what all the line and page breaks, columns, line heights, footers, footnotes, headers, boxes, graphic spaces, tabs, and margins look like in a representation of the final printed page.

When creating a new file from the main menu, the first choice you are asked for is which format file you want to use. There are two sets, laser based and normal. The Mail Merge format file, for example, contains all of the built-in defaults to work with the built-in mail list mail manager. You can also customize these format files for your own use. Within the format file you specify the default printer, page size, page margins, number of columns, placement of page numbering, distance between columns,and so forth. Almost all of these format defaults can also be modified in the document itself.

Macros are supported. After definition, a single character followed by an ESC will insert the macro for you at the cursor location. *WordStar 2000 Release 3* can have up to 40 macros of up to 11 lines each in a single macro file. You can have many macro files and call up the one you want to use for any specialized applications.

There is automatic widow and orphan control. You can set the number of lines to be kept together. You can also specify any number of set lines which must always be kept together.

If you use the built-in laser jet mail label default format to print labels three across using the built-in mail list manager, you will need to modify the default format to keep the entire label together. Otherwise, if some of the labels are missing a title or a second address line, they will not print correctly in the laser.

The ruler line can be changed whenever you wish. It works by inches rather than by columns, so it works correctly with proportionally spaced text.

Multiline headers and footers and footnoting are easy to use. Footnotes can be printed at the bottom of each page or at the end of your document. Since the numbering of footnotes is automatic, adding or removing footnotes does not cause any problems.

You can also print up to three columns on a page. The columns are not shown together on the screen, but are in the correct location in sequential screen pages.

Block operations are extensive and functional. In addition to normal block operations, you can do arithmetic within an identified block and sort within identified blocks.

If you like to have hanging indents with the first line of a paragraph being farther out than the body of the text, *WordStar 2000 Release 3* does this for you with a single tab command.

Other features include a Typewriter mode, where you type directly to the printer, rather than save and then print. If you wish, *WordStar 2000 Release 3* will also print in the background while you work on another file. Print spooling is not supported. However, you can create a mail merge document which prints a number of documents, then print this mail merge document in the background. It has the same effect as print spooling.

The documentation states that there is extensive LAN support. However, as of this writing, that version of *WordStar 2000 Release 3* has not been released.

WordStar 2000 Release 3 is a very well-thought-out program. Despite its vast resources and capabilities, it is easy to learn and use. It is more than a professional level word processor; it bridges the gap between desktop publishers and the power word processors. (MicroPro International Corporation, 35 San Pablo Avenue, San Rafael, CA 94903, 415/499-1200.) □

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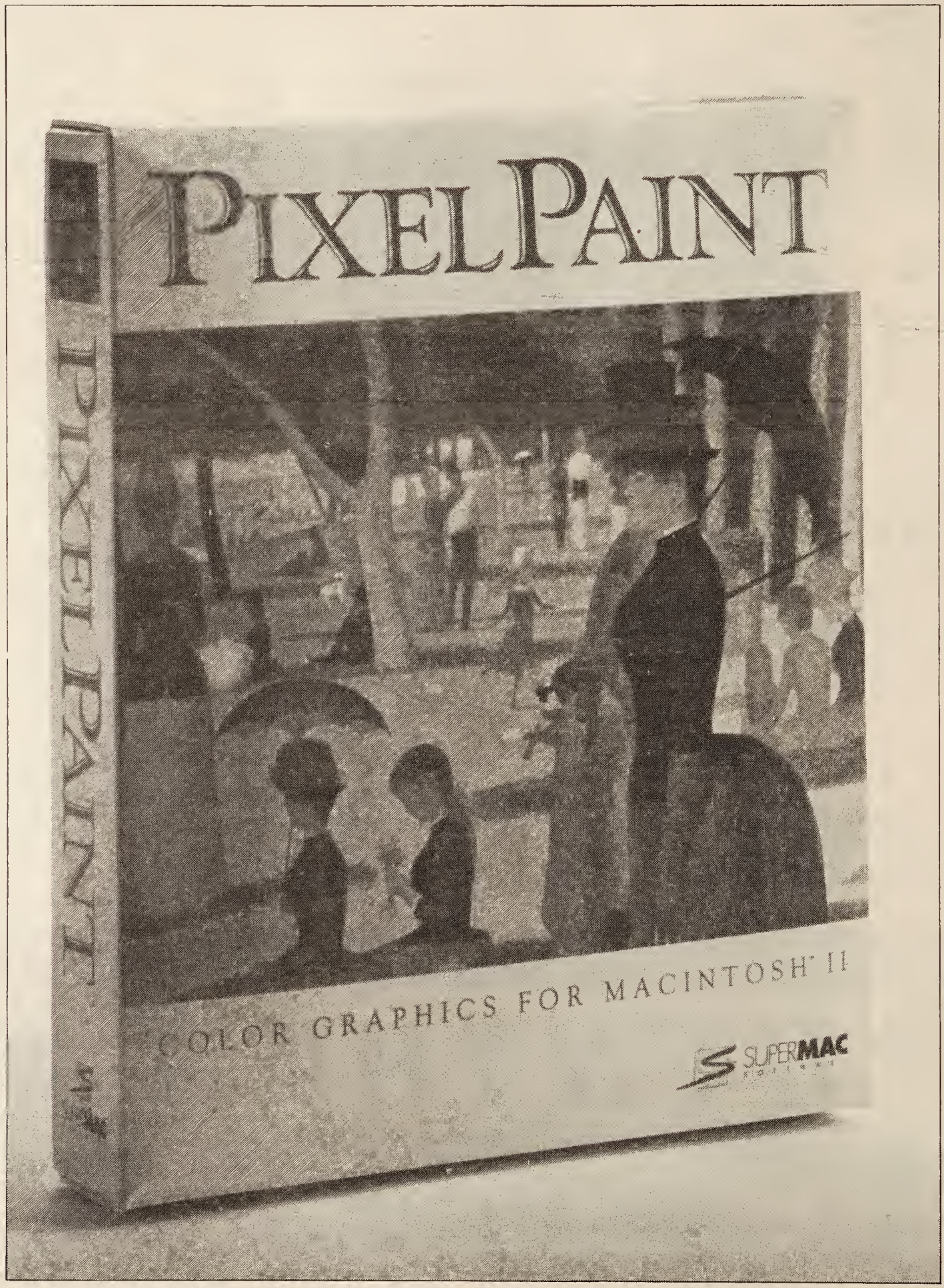

It's been four full years since the Macintosh wowed the microcomputer market with the introduction of Bill Atkinson's landmark *MacPaint* program. Through the years, graphics programs have evolved for the Mac, adding ever-increasing power and flexibility for image processing.

In black-and-white.

Last year saw the introduction of the Macintosh II, and the dawn of color for the Mac screen. To be precise, the promise of color for the Mac screen. Oh sure, Apple (and others) offered some "gee whiz" color demonstrations for the ColorMac, but nothing appeared on the software market to really harness the color capabilities of the new machine.

That's all changed with SuperMac Software's *PixelPaint*. To put things in perspective, *PixelPaint* is a Macintosh II *only* application. Not only that, you need a Macintosh II with at least two megs of RAM memory, a hard-disk drive, a color monitor, and a video card upgraded to display 256 colors.

With this mega-horsepower Macintosh equipment at hand, what does *PixelPaint* offer? My first brush with this program was with a couple buddies — the three of us having been Mac junkies since the machine's introduction. The result? We all sat, slack-jawed in disbelief, exploring *PixelPaint*'s capabilities — a marathon session that went from early evening till 5 am. Working with *PixelPaint* is a shock. A thrill. A gestalt shift that re-defines the Macintosh II's capabilities.

In spite of *PixelPaint*'s power and color-handling abilities, *MacPaint* users will feel right at home, with the familiar lasso, grabber hand, text tool, paint bucket, spray can, brush, pencil, and eraser available from the tool palette.

In addition, *PixelPaint* offers line and arc tools, and a variety of "shape" tools: rectangles, circles, polygons, and tools for odd rounded and polygon shapes. These objects can be created as "hollow," (no pattern or shading), or "filled" (patterns and/or shading). For these objects, a variety of line widths are available: the line widths can be selected directly from the palette, or can be user-defined. More important, these widths can be selected independently for both the horizontal and vertical axis. For example, a circle can be created that's "fat" on the sides, and "skinny" on the top and bottom.

A wide variety of editing effects are available. Any section of a graphic can be selected and cropped, skewed, stretched, adjusted for per-

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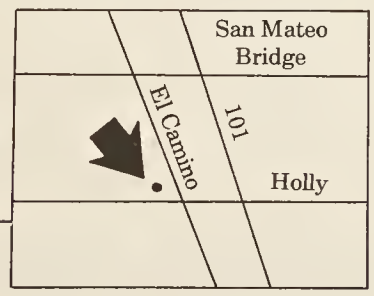

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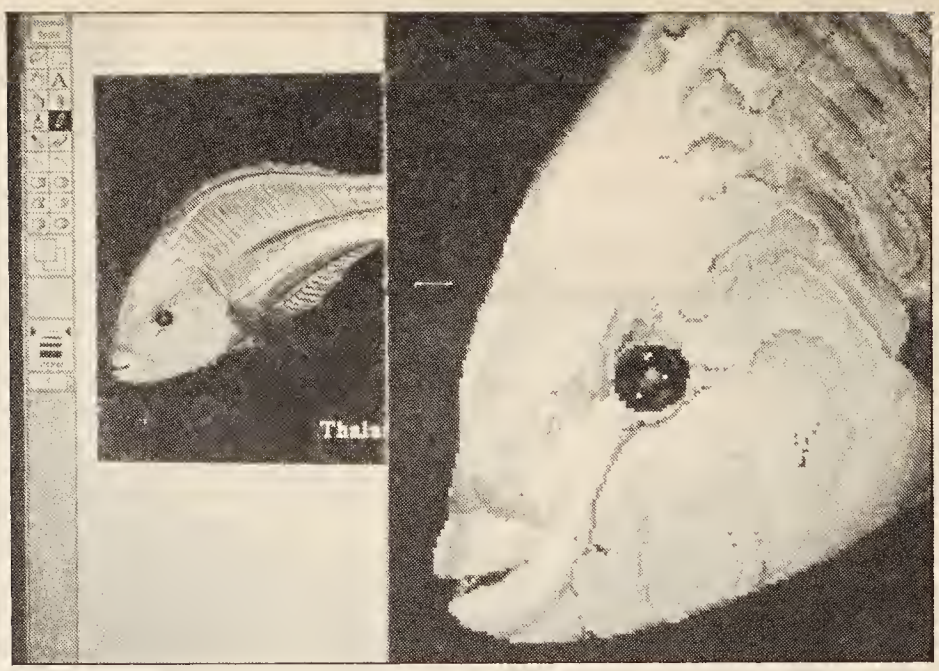

WASSELFISH — PixelPaint in FatBits mode, showing detail on the pixel level. Artist: Patricia Coleman, Los Gatos

spective, and slanted — in full color, of course. *PixelPaint* also allows the free rotation of graphics — including text!

Dealing With Color

Directly below the tools palette are boxes that define how *PixelPaint* will create colors. The first box offers three options: foreground color, "blend" color, and background color. The foreground color determines which color (or shade of gray) will be used for filling areas of the document. Blend? More about that later. The background color sees occasional use, such as in defining "backgrounds" behind text entries.

The next box down defines the patterns for the foreground color. A variety of standard patterns are offered, and each can be "customized" from an option on a pull-down menu.

How are colors determined for *PixelPaint*? The Macintosh II stands ready to create screen colors from over 16 million possibilities. However, current Mac II video cards can only support 256 colors on the screen at a time, so *PixelPaint* allows the user to define the range and textures of color used for a *PixelPaint* document. A pull-down menu item allows the user to select a "color palette" from a list, or to create a custom color palette.

The color palettes available in *PixelPaint* are unique to this program, and are different from the Mac II's built-in system colors. Once a color palette is selected for a document, it applies all of its colors to the document. This is a mixed blessing: it allows the user to precisely define the colors available to the document, but can interfere with the "system colors" used by the Macintosh II. In most cases, there's no clash, but SuperMac's programmers are working to correct this in a future version of *PixelPaint*.

Special Effects

PixelPaint consists of two sets of tools: Normal Tools and Special Effects. Since both sets affect pixel-oriented graphics (rather than "object oriented" graphics), they work interchangeably on the current document.

The Special Effects set of tools is where *PixelPaint*'s abilities really shine. With each tool selected from the tool palette, a special pull-down menu appears, showing the options for that particular tool. This is where the "blend" selection of the color palettes comes into play. For example, the user can select the "line" tool, and choose a foreground as blue, and a blend as purple. Then, with the line tool, lines drawn in *PixelPaint* will be created in a smooth, even, color transition from blue to purple.

To put things in perspective, PixelPaint is a Macintosh II ONLY application. Not only that, you need a Mac II with at least two megs of RAM memory, a hard-disk drive, a color monitor, and a video card upgraded to display 256 colors.

The same is true for "filled" objects. Create a filled box with the same selection of blue-to-purple, and the box will be filled with a gradient of color, ranging between the two colors.

The way that colors are filled can also be adjusted: another pull-down selection offers the flexibility to fill colors from bottom to top, top to bottom, left to right, right to left, or as a "sunburst"; the foreground color in the center, flaring out in circles to the background color. A number of other fill options are available. Dazzling. Spectacular. And ready at the touch of the "fill" command.

When a section of a picture has been filled with a color blend, it would be nearly impossible to exactly match a color from the midpoint of a blend. For this, *PixelPaint* offers an "eye-dropper" tool. Simply position the eye dropper where you want to "pick up" the color, and click: the foreground color will automatically change to that exact hue. Holding down the tab key while using the eye dropper blows up the area around the eye dropper to fatbits mode, so an exact pixel can be selected for a color match.

About The Shadow

Unique to *PixelPaint* is the ability to create "shadows" behind an object. Draw a circle, and *PixelPaint* can create a grayed shadow behind that object. The location of the shadow can be adjusted by the user to create a shadow in any direction.

But creating a grayed shadow is just the start. Another menu item allows the user to adjust the characteristics of the shadow. For example, the shadow can be selected in a certain color. Also, *PixelPaint* offers the ability to "blend" shadows up to the object. An object can be drawn with a blue fill pattern, and its shadow can be defined to cover the spectrum of the rainbow, starting at the shadow, and building up to surround the object.

Working With PixelPaint

Covering all the features available with *PixelPaint* would probably fill this entire issue of *MicroTimes*. The more you work with the program, the more depth and possibilities are revealed.

PixelPaint makes extensive use of "pop-out" sub-menus (appearing to the right side of the pull-down menus), and "pop-up" menus (which appear when a single control is selected). The interface and controls are intuitive; I know several folks who have mastered the program without ever cracking the manual.

Large screens are supported by *PixelPaint*: the size of the drawing area is determined by the available memory. Contrary to information in the User's Manual, it's possible to open *PixelPaint* on a one-meg Mac II. With one meg, *PixelPaint* forces the user to select a small area of a document to work on. A two-meg configuration allows nearly a full-page view, and the user can scroll to areas not displayed. Five megs are required to support a full-screen 19" color monitor.

Which brings up a minor annoyance with *PixelPaint*: the special "fill effects" only affect the area of the document that's on the screen. Shrink the document window down, use the paint bucket for an area fill, and only the portion of the document that's visible is affected. *PixelPaint*'s programmers are aware of this, and hard at work on a fix for the next version.

Another minor glitch has to do with "auto scrolling" in the Fat Bits mode: it's not supported with *PixelPaint*. If you try to do detailed image editing in the Fat Bits mode, when you hit the edge of the window, that's it. The user must click down on the scroll boxes to continue the edit into the next region of the document. Again, something to be addressed in a future release of *PixelPaint*.

What Do You Do With PixelPaint?

To be blunt, color output with *PixelPaint* is a problem. Because of the range of colors that can be created with the program, *PixelPaint* does not print in color on Apple's ImageWriter II.

Worse, *PixelPaint* won't allow the user to print color separations of the image, to be used for a color offset press. Again, this may be addressed in a subsequent release of the program.

Included with the program is some sample artwork, printed with the new Tektronix 4693D Color Image printer. This printer resolves to 300 dpi in full color, and the resulting image is rich, vivid, and sharp. However, this printer will retail for about $10,000, and will still only produce first-generation output — nothing that can be used by commercial printers. (Of course, a color separation could be made from the Tektronix's output, with a corresponding reduction in clarity and color saturation.)

Several manufacturers have recently announced equipment to produce 35mm color slides from *PixelPaint* images. While this equipment will also nudge the $10,000 mark, a number of commercial services will transform color *PixelPaint* images into color slides for about $10 per slide.

PixelPaint images can also be cut-and-pasted into other programs. For example, *PixelPaint* graphics can be used for animation in MacroMind's *VideoWorks II*. These two programs can be run under MultiFinder, but you need at least five megs of RAM to pull it off.

It's important to realize that *PixelPaint* is a breakthrough product for the Macintosh. In its first release, it shows power and potential guaranteed to dazzle the most jaded Macintosh user. There's no doubt this program will evolve in harmony with color printing technology. By the end of this year, *PixelPaint* could well represent a new industry standard for color graphics production.

PixelPaint retails for a lofty $495, but for a limited time will be included free with the purchase of SuperMac's Spectrum graphics adapters. For further information, contact SuperMac Software, 295 North Bernardo, Mountain View, CA 94043. (415) 964-9694.

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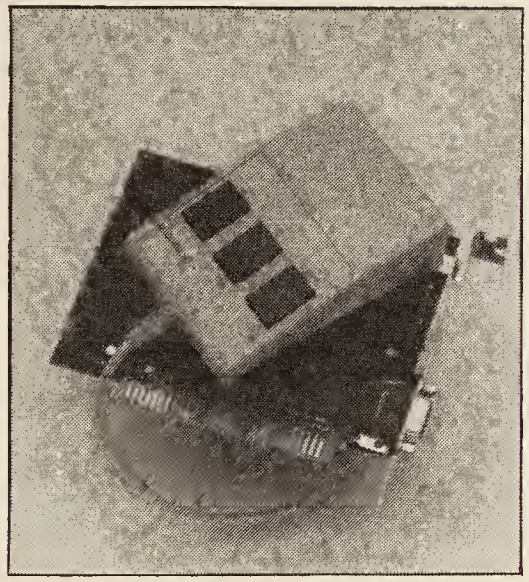

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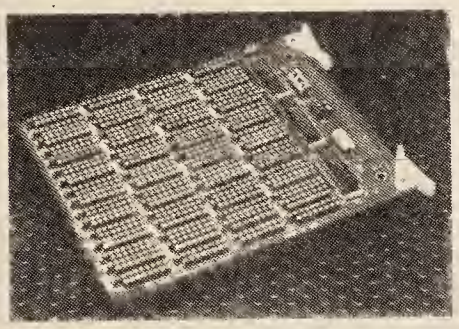

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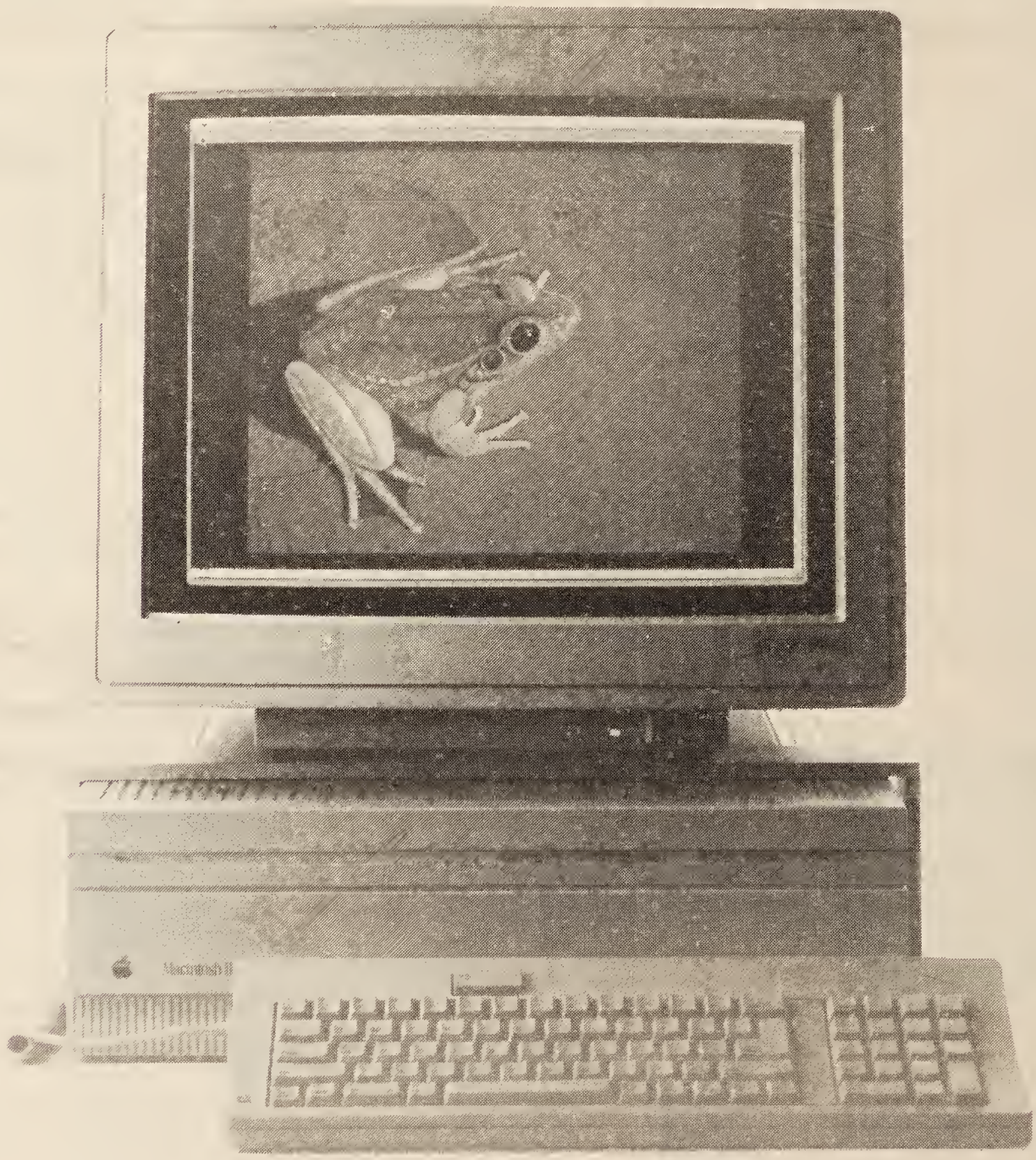
The SuperMac Color Trinitron Monitor

For The Macintosh II

By Jim Wolcott



Earlier this year, the introduction of the Macintosh II brought the promise of color to Macintosh software. Make that expensive color to Macintosh software. Apple's own 13S high-resolution RGB Color Monitor, when bundled with its matching video card, carries a wallet-wrenching $1,647 price tag. Concurrent with the introduction of the Macintosh II, SuperMac Technology, of Mountain View, California, rolled out the topic at hand: the 19S Spectrum Color Monitor. As this monitor has evolved, its retail price has broken the stratospheric $5,000 barrier.

We're talking the price of a new car (okay, a small, Korean car). Just for a *monitor system*.

What's In A Monitor?

So why are color monitors for the Macintosh II so pricey? To understand, let's take a look at how the image is created on the monitor. A monitor package for the Macintosh II actually involves two components: the monitor itself, and the graphics adapter, a card which occupies one of the NuBus slots within the Macintosh II.

What's involved for the graphics adapter? First off, the Macintosh has only one graphics interface, so there's no issue of choosing different "graphics cards" to suit various software. But for a large-screen color monitor (meaning larger than Apple's standard 14S color monitor), the graphics adapter must be able to describe the additional territory of the screen, and be able to calculate the colors for that area.

For the Macintosh, these calculations are serious business. The image on the screen is composed of "pixels:" the individual dots that create the image. SuperMac's 19" Spectrum monitor displays 1,024 pixels horizontally, and 768 pixels vertically,

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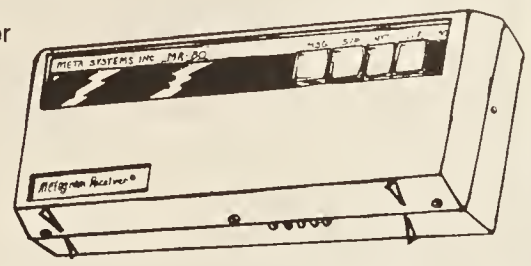

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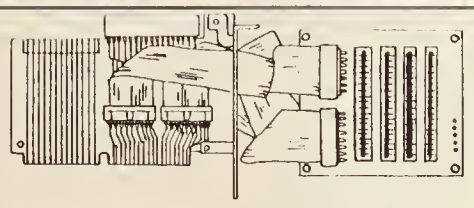

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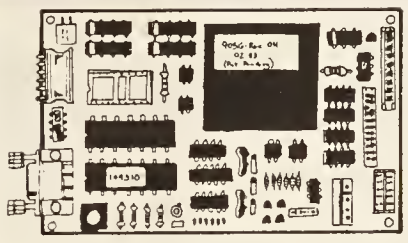

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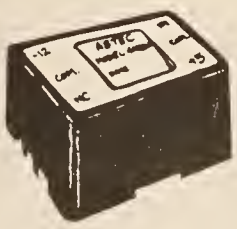

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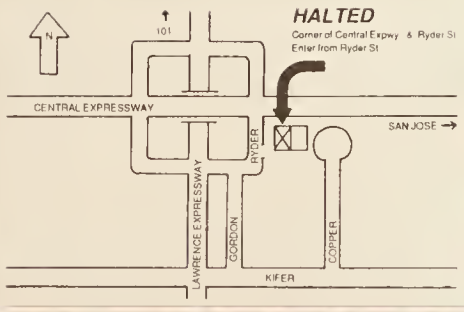

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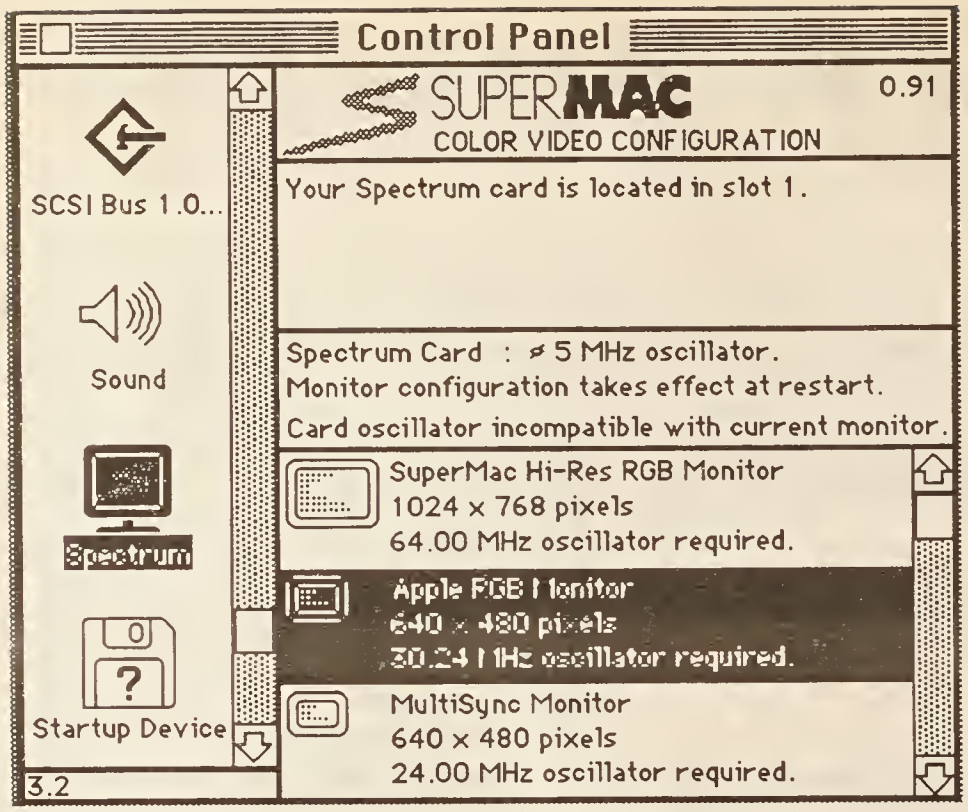

A Control Panel resource allows the user to set the Spectrum 10000/8 graphics adapter to match the monitor in use.

which means the graphics adapter has to keep 786,432 pixels under control.

The addition of color complicates the issue. For a color monitor, each pixel is composed of three small dots of color: red, green, and blue. The monitor itself contains three separate electron "guns:" one for each of the color dots. If the three guns hit all three dots with the same intensity, the colors blend to white. None of the dots hit? Black. Colors are produced by varying the intensity of the three guns.

How many colors are possible with the Macintosh II? The intensity of each of the three color dots is described by an eight-bit binary number. Therefore, $2^8 \times 2^8 \times 2^8 = 16{,}777{,}216$ different colors.

However, the SuperMac graphics adapter addresses color on a pixel-by-pixel basis. Depending on the RAM memory available on the graphics adapter, it can create colors for up to eight bits per pixel. With the memory-enhanced SuperMac graphics adapter, 2^8, or 256 colors, can be on the screen at one time.

The key here is the "at one time" part of the scheme. How does the graphics adapter determine which of the 256 colors to select from the 16,777,216 possibilities? For this, the Macintosh II assigns a "Color Look-Up Table" (known in Mac-speak as the CLUT). For 256 colors, the CLUT scales those colors, across the color spectrum, from the 16-million candidates.

The CLUT can be controlled and adjusted by the software running on the machine. For example, various "Look-Up Tables" can be swapped in and out as the program runs its course. This can happen with lightning speed: in fact, during the "blanking" between successive screens during an animation sequence. At this speed, the monitor can appear to display much more than the 256 colors that appear at any one instant.

For each and every pixel on the monitor, the routine goes something like this: The graphics adapter calculates the color value for the pixel, extracts the corresponding color from the CLUT, and creates output signals to drive the monitor. The three color guns within the monitor then precisely blast the three little color dots of *each* pixel to produce that color.

How fast does all this happen? For SuperMac's 19" Spectrum monitor, the refresh rate is 60Hz — about 60 times per second. Imagine: all 786,432 pixels, representing over two million color dots on the screen, are calculated and reproduced *60 times per second*. Taking full advantage of swapping the Color Look-Up Tables, 60 different Look-Up Tables can be called *every second*.

The Spectrum 1000/8 is a truly universal graphics adapter, with the ability to address all software and hardware requirements for the Macintosh II.

Addressing the Monitor

Unique to the SuperMac graphics adapter is the variety of ways it can control various monitors. There are two things at work here: the various settings for the video output, and the "dot clock" speed.

For the video output settings, SuperMac has a program built into the graphics adapter's ROM chip. Ideally, the Spectrum graphics adapter will "sniff" for the monitor that's connected, and automatically adjust its output as required. In addition, a Control Panel item ("cdev resource") is included to manually set whatever parameters may be required for a particular monitor — now, or in the future.

Though all existing Macintosh software uses a common video interface (as far as the CPU is concerned), Apple's upcoming A/UX (UNIX) for the Macintosh II will require another set of adjustments for the video output. When A/UX finally arrives, the 1000/8 graphics adapter should be ready to handle it.

The other parameter, the "dot clock," is timed with a quartz crystal. As supplied, the 1000/8 has the correct crystal for a 19" monitor: smaller monitors (like Apple's 12" monochrome and 13" color) require a different crystal. The Control Panel monitor control is intelligent, and can detect when a different crystal is required for a particular monitor.

To accommodate various monitors, the quartz crystal is socketed on the circuit board. This feature makes the Spectrum 1000/8 a truly universal graphics adapter, with the ability to address all software and hardware requirements for the Macintosh II.

Working With The Spectrum Monitor

Setting up the SuperMac Spectrum system is simple. Just plug in the graphics adapter — it only fits one way, and there are no dip switches to set. Connect the cable to the monitor, and plug in the power. That's it. Fire up the system, and use Apple's Control Panel desk-accessory to set 2, 4, 16 or 256 colors for the display (or, in black-and-white mode, 2, 4, 16 or 256 shades of gray).

Shortly after the introduction of the Macintosh II, compatibility of the graphics adapter was an issue. At the last possible moment, Apple made some changes in the specs for the video interface, and, as a result, the very first run of SuperMac's graphic adapters (last summer) had trouble with various software. With one exception, that's been resolved: during our test period, the SuperMac Spectrum system ran everything except Spectrum Holobyte's *Falcon* game. Whatever *Falcon* does to the SuperMac board is unique: for example, Silicon Beach Software's *Beyond Dark Castle* — the ultimate test of Macintosh game graphics — ran perfectly.

The color is, in a word, dazzling. For color applications such as SuperMac's *PixelPaint* (see accompanying article), or Quark's *XPress* page-layout program, the display has to be seen to be believed. No color photograph can do justice to the depth or intensity of the colors produced on the screen.

SuperMac offers the 19" Spectrum color monitor in two versions: the "Standard" model for $2,995, and the "highest resolution" Trinitron model for $3,695. The latter employs a number of image-enhancing gadgets, and is sharper, brighter, and has better color saturation than the Standard model.

For sharpness, the Trinitron monitor takes the prize. In a side-by-side comparison with Apple's 12" monochrome monitor, the Trinitron was sharper, easier to read, and had better contrast. The 19" Standard model was another story entirely: the words "fuzzy" and "bleary" and "murky" come to mind. Running word-processing software on the Standard model required increasing the font size to 14-point — just to read it without getting a headache. We're not splitting hairs here: the difference between the two monitors is night-and-day. Considering the total investment in a SuperMac monitor system (monitor, video card, and memory upgrade), it would be silly not to pop the extra $700 for the Trinitron.

The acid test for any large-screen monitor is the "scrolling speed." When working in the 256-color mode, the scrolling speed is annoyingly slow. For word processing, I always shift to the two-shades black-and-white mode. In fact, for any program that doesn't make explicit use of color, the black-and-white mode brings across-the-board increases in speed.

As usual, money is the bottom line. Can you get same-as-new-car value out of a Macintosh monitor? Productivity is the issue: will the larger screen enable you to work faster, and more efficiently? For Macintosh professionals, who spend their days in front of the computer screen, the answer is yes. For the 19" monitor, Microsoft's *Excel* spreadsheet displays 53 rows by 13 columns. Word processors will show (very nearly) a life-size, 8-1/2" x 11" page. Page-layout programs offer acres of welcome space for the placement of text and graphics. And graphics programs offer startling "zooms" into the "fat-bits" mode, for quick and precise editing of the image.

The SuperMac graphics adapter is available in two versions: the 1000/1 for monochrome systems ($749), and the 1000/8 for displaying the full 256 colors ($1.495). You can start off with the 1000/1 card, and upgrade to the 1000/8 for an additional $795. If you can get by with a 16S color monitor, SuperMac offers a 16S Trinitron for $2,495. A 360° tilt-swivel stand (highly recommended) is available for $195. For further information, contacct SuperMac Technology, 295 North Bernardo Ave., Mountain View, CA 94043. (415) 964-8884. □

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The Guru And The Tramp

In Which Baba Charstar Learns The Secrets Of The UNIX Standard

By Bennett Falk

After a hard day of beating on a drum and chanting, Baba Mahamaya "Curly" Charstar slipped into a fast food store, bought a six-pack, and settled down on a park bench to watch the sunset and relax.

An unshaven man with an ill-fitting hat, worn-out shoes and rumpled clothes sat down on the bench beside him.

"Yo, bub," the tramp ventured, "you got a yen to part with one o' them brewskies?"

"Not 'specially."

"I could make it worth your while."

"Oh? How?"

"Well, tell me, you know anything about computers?"

"Yep. As a matter of fact, I do. I am widely regarded as a UNIX guru."

"Gooroo? What's that? Some kinda hifalutin' hacker?" The tramp laughed and quickly fell victim to a coughing fit.

"Well anyways, I'll bet that being a gooroo and a buck fifty'll get you a cup o' yuppie coffee in Berkeley just about any day. Look here, 'f you're so smart whyn't you got a job?"

"You don't understand. Being a guru, I have transcended the need for employment. And anyway, what could you possibly tell me about computers?"

"Oh, hey, I get around. I read a lot, too: y'know, I sleep under some o' the country's most influential newspapers.

"Now, lemme see, UNIX, that'd be a multi-user operating system from AT&T, sort of a computer traffic cop, as I understan' it. It's a good thing you met me, 'cause if you got anything to do with UNIX, you could be lookin' at hard times ahead."

"How so?"

"Well now, that'll cost you a beer, don't you know, but I'd say that's a real small price to pay."

"Oh, all right." Baba Charstar popped the top and handed the can over. The tramp took a long swig, looked up at the sky contemplatively, and belched.

"Now. Listen up, 'cause I'm only gonna say this stuff once. AT&T owns UNIX, am I right?"

"Right."

"And they owned it from the git-go, before they ever thought about making their own computers. It started out as some kind o' research tool, a little something the guys in the lab worked up to make the daily grind a little easier. And the idea was to have something that would run on any computer that came their way, mostly DEC stuff back then, but just about anything would do.

"Now, AT&T wanted to work out some kind of arrangement about Berkeley UNIX, and they decided to kill two birds with one stone, so to speak, and made their deal with Sun Microsystems. Now the great thing about this is that Sun Microsystems is not only a big Berkeley UNIX booster, but also a real hot property in the technical workstation market."

"Well, time passed and AT&T started making computers and in 1983 they looked around and saw a lotta different versions of their own stuff *and* Berkeley UNIX *and* Xenix, and they decided it was time to get a lot more serious about UNIX. So they came up with UNIX System Vee."

"That's five."

"Huh?"

"It's System *Five*, the 'V' is a Roman numeral for five."

"Vee, five, whatever. Anyway, they insisted that System *Five* was gonna be it, the standard for UNIX from here on out. And on top o' that AT&T's UNIX development was gonna be done on their '3B' machines and then get ported to other computers. This was a touchy subject for a while, but eventually things worked out. 'Course, there was still the BSD kind of UNIX from that university in Berkeley, and Microsoft had Xenix, but things were settling down.

"AT&T's computers been selling okay, but they haven't exactly been burning down the house, if you know what I mean. And in the meantime, powerful computers been getting cheaper and cheap computers been getting more powerful and bingo, there's a whole new market out there for the 'technical workstation', something no bigger'n a desktop, but about as powerful as mini-computer, whatever *that* is, and costing, say, between $3,000 and $30,000. This is a *big* market, you see.

"Now, a lotta folks figure that UNIX is just the thing for technical workstations, so AT&T figures to make a lot of money here, even if they don't sell the hardware.

"But just to kinda consolidate things a little better, AT&T's been wheeling and dealing with the other folks that got UNIX products on the market. With Xenix, that was a piece of cake; they hammered out a deal with Microsoft back in early '87 to work toward binary compatibility between Xenix and System V. You know anything about 'binary compatibility'?"

"Yeah, sure," Baba Curly answered, "it means that programs compiled under Xenix will run under UNIX System V, and vice versa. Of course, it's assumed that the Xenix and the System V are running on the same kind of processor."

"I couldn't have put it better myself. Y'know, you're smarter'n you look. So anyway, since Xenix was basically a product for processors made by Intel, that agreement could more or less nail down a standard for UNIX on the Intel family of chips, and that's a pretty big deal.

"Now, to put some meat on the bones of this agreement, Microsoft pulled in the Santa Cruz Operation and AT&T brought in Interactive Systems, 'cause those companies had worked on the two products that are being merged. So, even as we speak, the four of 'em are working on a Binary Compatibility Standard, which I would just as soon call a 'BCS,' okay with you?

"Fine by me."

"Good. Now trying to come to some kinda agreement with the Berkeley UNIX crowd was a little touchier. I mean, a university's not exactly like a company, but there are some companies that have been trying to promote Berkeley UNIX in the marketplace. Some of 'em are software companies, like Mt. Xinu, that's Unix Tm backwards, y'know."

"I know, I know."

"Good, I didn't want you to miss nothing. Uh-oh, this beer's empty, mind if I have another one?"

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"Oh, what the heck, why not?"

"Thanks. Now, AT&T wanted to work out some kind of arrangement about Berkeley UNIX, and they decided to kill two birds with one stone, so to speak, and made their deal with Sun Microsystems. Now the great thing about this is that Sun Microsystems is not only a big Berkeley UNIX booster, but also a real hot property in the technical workstation market. So AT&T cosies up to Sun. You following this all right?"

"Yeah, sure."

"Well, it's about to get complicated, so let me know if I'm going too fast for you, okay?"

"Right."

"So AT&T has made a deal with Sun. Back in October of '87, in fact on October 19, the day stock market fell all apart, they announced two things: first, that some future AT&T computer would use a new architecture from Sun called "SPARC," *and* second, that AT&T and Sun would collaborate on an ABI for SPARC.

"'What's an ABI?', you say, and I says, it's nothing but a BCS for these new SPARC processors. AT&T's betting that there will be enough of 'em to deserve a standard, and they'd prefer to get that standard down on paper before there's incompatible products all over the place.

"The way Sun and AT&T worked it out, the first step toward this ABI is for Sun to produce a version of its operating system that conforms to the System V Interface Definition, the es, VEE, eye, dee. You know about this stuff?"

"Of course," replied Baba, "The SVID describes all the inputs expected by the UNIX kernel as well as all the kernel's outputs. It's a weird document: it doesn't explain *how* the kernel does anything, just what goes into it and what comes out of it."

"Well, you're not a half bad talker, are you?" the tramp replied. "You got any poop on SPARC?"

"Sure," the flattered guru warmed to the topic. "SPARC is a kind of tortured acronym for Scalable Processor ARChitecture. I don't know all the details about it, but it's a Reduced Instruction Set Computer, RISC for short, design.

"The idea behind RISC is that processors don't need to have a lot of specialized instructions. With a Complex Instruction Set Computer (CISC), you might get a processor with instructions to do a lot of fancy things, but you'd pay a performance penalty.

"The RISC design assumes that you can get everything done by building more complicated functions out of a few (say, less that a hundred) 'primitive' instructions and a lot of fast memory (or registers) right on the chip. If the number of instructions is small enough and they have a more or less uniform format, it becomes possible to 'hardwire' them into to chip for re*ally* fast execution.

"The RISC people are always talking about 'mips,' millions of instructions per second. Of course, RISC machines have to perform more instructions, say 30% or so more, than CISC machines to get the same work done, but these instructions should execute at about five times the CISC machine speed, so in theory, RISC machines have a big advantage."

The tramp grinned at him and slipped another beer out of the bag. "That's good, real good. But, you got to understand that the real issue here isn't this RISC stuff, or Sun's proprietary architecture or even the agreement between Sun and AT&T to work out some kinda amalgamation of System V and Berkeley UNIX. Oh, sure, the October '87 agreement was a big deal, but the two companies have been working since 1985 on making their versions of UNIX compatible.

"Nope, none of that would amount to a hill of beans if it weren't for the announcement in January that AT&T would buy about a 20% interest in Sun. That 20% interest is gonna cost AT&T about $300 million but for that, they get a seat on the Sun Board of Directors.

"Anyway, this deal gets announced, and whoa, Nellie! I mean, all of a sudden we got meetings and consortiums coming outa the woodwork.

"Motorola hits the deck with a plan to put together a BCS for UNIX on Motorola's 68000 family o' processors. I mean, it's gotta be a little insulting to them that there's all this talk about a BCS for an architecture that ain't even a force in the industry yet. So they get together with Unisoft (which has done a major share o' the work porting UNIX to 68000-based machines) and some other companies and launch a program to come up with compatibility standards for UNIX software on Motorola processors.

"Now this makes a lotta sense, and the interesting thing is that the group working on the Motorola BCS doesn't include AT&T, who owns UNIX and who took the initiative in the other two BCS efforts.

"O' course, AT&T never was a big seller of Motorola based computers. And I guess you could say that a binary compatibility standard basically shows how a family of processors is gonna relate to the SVID, and that the BCS doesn't *have* to affect UNIX itself.

"But personally, I think that AT&T and Motorola are gonna have to settle their hash someday soon, 'specially since the Motorola BCS is supposed to cover the whole 68000 chip family which will eventually include a RISC chip.

"If AT&T and Motorola wanted to get real silly, they could each claim their binary control standards were for RISC processors in general, but it don't make sense to enforce a BCS on something that's not a chip, and it especially don't make since to have a BCS for a theory of how a computer ought to work.

"And Sun's got to be careful, too. They're gonna have to live with whatever Motorola comes up with 'cause that's the chip family they've been using so far. Even if Sun stopped selling Motorola-based computers right now (which they won't), they've still got an installed base to support.

"So that's one part of what's happening. You know what the other part is, sonny?"

"Haven't the foggiest," the guru replied, rummaging through the bag and wondering why there were no beers left.

"The other part is that a whole bunch o' companies got worried that UNIX, which started out as hardware independent, is being tied to the SPARC architecture. They think that there's something else behind all the talk about an ABI for SPARC and a hybrid System V/Berkeley UNIX product, that is, AT&T's gonna tailor UNIX to Sun's new architecture, so SPARC machines will perform better than other UNIX machines, and Sun's gonna have the inside track on the way UNIX develops.

"Just why these worried folks didn't come unglued back in October, I really couldn't tell you, but man, oh man, the day after that equity purchase agreement was announced in January, the concerned parties got themselves together pronto.

"First, a telegram was sent to the the President of AT&T's Data Systems Group, Vittorio Cassoni, who happens to be the man who's gonna get to check out the view from the Sun board room. The telegram basically said all the signees were worried about the future of UNIX as an 'open standard' and asked Cassoni to meet with them. The companies represented in that telegram were Apollo, Data General, DEC, Gould, Hewlett-Packard, Intergraph, Integrated Solutions, MIPS, Motorola, NCR, Prime, Silicon Graphics, Tandem, Unisoft, and Wyse.

"The San Jose reporter that broke the story called 'em the Hamilton Group 'cause they met at DEC's place down on Hamilton Ave. in Palo Alto, but there's some that calls 'em the 'Gang of Sixteen.' I'd just as soon call 'em the 'licensees': they're all AT&T's customers and trying to get the most they can outa their UNIX licenses.

"Well, they got their meeting with Cassoni on January 28, and it was a beaut. The licensees insisted that an 'open software standard' ought to provide equal opportunity for all interested parties to participate, unbiased resolution of conflicts, equal and timely access to new versions, equal rights in marketing and disclosure, public definition of the standard, and of course, hardware independence.

"That's quite a mouthful by itself, but the licensees were ready to confront Cassoni with just how AT&T UNIX strategy had deviated from this ideal.

"When Cassoni had his turn, he talked about 'openness,' too, but where the licensees were focused on openness in corporate relations, Cassoni emphasized the openness of technology: the need for 'open architecture' and for standards for binary compatibility. Let me tell you, I would like to have been a fly on the wall for the Q and A part of that meeting."

"Now all this was just before UNIFORUM, one of those big whoop-di-doo trade shows for UNIX. You ever been to one o' them?

"Yeah, I went once a few years ago. I spent the better part of an entire afternoon in the exhibits listening to some bozo in a pith helmet brag about being kicked off of ARPANET."

"Kid, you got a lot to learn. Y'know, if you play your cards right, you can drink free all week at one o' them shows. You oughta get yourself a lifestyle consultant.

"Anyway, two things happened at UNIFORUM to kind of round out the controversy. First off, AT&T announced the schedule for System V Release 4.0, which will be the end result of all the wheeling and dealing around Xenix and Berkeley UNIX. It's gonna be developed on the 3B computer and then ported to the Intel 80386 and SPARC processors, and after that it'll be ported to 'other architectures.' Kinda strange that Motorola didn't get mentioned in the announcement.

"The second event at UNIFORUM was a pep talk from Jack Scanlon, a vice president for product development in AT&T's Data Systems Group. He took the stage to do two things: reassure everybody that AT&T wouldn't abandon open licensing, and warn everybody that a stampede by the licensees to define a standard of their own would screw things up.

"The announcements at UNIFORUM calmed down some of the licensees, at least, and a few days later Motorola finally got a nod from another AT&T VP, John Boyd, who put Motorola right up there with Intel and SPARC as a major standard platform. Hard to say what that means, but better late than never, I always say.

"An' now the whole kaboodle has gone back into hiding. There's still a lot of strong feelings on both sides, but I think it's all sort of one on one now, with AT&T and individual licensees sparring with each other.

"Any questions?"

"Yeah," the young guru grinned, "who's right?"

"Beats me. You got any spare change?" □

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Pocket Baud

By Brock N. Meeks

You've seen those slick ads in computer magazines — the ones that proclaim the wonders of "state-of-the-art pocket modems." The ads claim that these down-sized modems give you all the telecommunications capability of your regular modem, which, by comparison, is the size of a 1932 Hudson. The ads are peppered with the quick wit of Madison Avenue copywriters and photography that belongs in the pages of Vogue.

But do these modems work? Yes, but some better than others. This column looks at three of the better known pocket modems: Migent, Parrot. and Worldport.

Form, Fit, And Function

"The pocket modem. Never leave home without it." (My apologies to American Express.) These pocket modems are indispensable for the traveling telecommunicator. They hardly take up more room than a pack of Marlboros, and can be adapted to fit any computer with an RS-232 port. Laptop users will love these modems, too.

If you have a slot in your laptop, these modems free you from the burden of an internal modem; and for those venerable Tandy Model 100 and 200 users (myself included), these modems free you from the tyranny of this computer's built-in 300-bps modem.

All the modems examined below respond to the Hayes "AT" command set. This assures compatibility with the majority of communications software on the market.

Migent: Points For Style

The best known of these pocket modems is from Migent Inc., and is billed as a "state-of-the-art information machine that looks like one." And in this age of sleek lines and fast figures, the Migent's stylized red plastic case looks to have been designed by a graduate of Pasadena's famed Art Center College of Design.

Although Migent's done its PR homework, its modem turns out to be the largest of the lot. It also has the fewest features.

The Migent performed erratically; this isn't a characteristic you treasure in a modem mainly used "in the field." When used on noisy telephone lines the Migent would summarily drop carrier — sometimes. When I asked Migent's marketing director, John Pocaro, about this he could only offer: "I have reports saying that say the modem is susceptible to noise, and others that say the modem works fine on noisy lines; so it depends on where you test the modem." Comforting, no?

The Migent is also devoid of status lights, those LEDs that flash on and off telling you exactly what's happening with your data transmission. Most external modem users I know swear by these status lights. In an attempt to overcome the lack of these status lights, Migent is now shipping a software program with the modem that puts a graphic representation of the status lights on your monitor — but only if you are working on an IBM or compatible. Model 100/200 users are out of luck; so are Macintosh users.

The modem is powered by a nine-volt battery or AC adapter. (The AC adapter is now shipped with modem; early versions of the modem had the adapter listed as an option.) One nice feature is that the modem sounds an alarm through the computer's speaker when the nine-volt battery is low. This is more of a survival feature than a luxury; a low-power battery can wreak havoc on your data transmission, much like a noisy telephone line will.

The modem has no provision for use with acoustic modem cups, unlike the WorldPort modem which we'll get to below. Also, the modem is based on the Bell standard and doesn't work well when trying to connect with overseas modems. The Macintosh version comes with *MacTerm* software and all the necessary cabling.

At $159 the Migent is adequate, but is backed by more flash than function. Pocaro hinted at some extensive upgrades "in the next three months" but declined to give details. (Migent Inc., P.O. Box 6065, Incline Village, Nevada 89450; Phone: 702/832-3700).

Pocket Parrot

The Parrot modem from Novation gets high marks for its engineering. This modem is about the same size and weight as an ordinary audio cassette. Unlike the other modems examined here, the Parrot uses neither battery power nor a wall outlet; it draws all the power it needs from your computer's RS-232 port.

External modem users will appreciate two distinct features of the Parrot: status lights and a speaker. The four red LEDs indicate when the modem is ready, off-hook, connected to a carrier and transmitting (or receiving). The speaker is a meek sounding device, but it is a speaker nonetheless. I like speakers — in addition to status lights — because you can hear whether your call goes through or if the number you're calling is busy (or out of order, or the number's been changed, or...)

For all its technological innovation, the Parrot is the most cumbersome to hook up. Although the Migent and Worldport modems connect directly to the RS-232 port, the Parrot has no serial connector. In place of the serial connector there is modular plug similar to the one on your phone. This connector runs to a serial adapter that, in turn, must be connected to your computer. For anyone who dislikes fooling around with cables, this is a definite drawback.

I used the Parrot on a desktop IBM, a Toshiba T1100 and my model 200. The Parrot worked fine with several different communications programs. It also performed well with the Model 200's built-in communications program. But the modem was also susceptible to noisy lines. Any amount of noise on the line caused the Parrot to drop carrier.

Despite the cabling hassle, the Parrot is a bargain at only $119. (Novation Inc., 21345 Lassen St., Chatsworth, CA 91311; Phone: 818-998-5060.)

World Class

Touchbase Designs has two pocket modems: the Worldport 1200 and the Worldport 2400. Both are upgraded designs of earlier pocket modems put out by Touchbase. The experience shows.

Both modems are equipped with a serial connector; when ordering, you specify male or female connector. The choice of connectors allows you to connect the modem directly to the RS-232 port, regardless of the type on your computer. (However, if you have one of those nine-pin DIN connectors, you're out of luck, unless you're handy with a soldering iron and can fashion your own cable.)

The Worldport modems have no speaker, but they do have a set of LED status lights, including one that warns of a low battery. The modems are powered by a nine-volt battery that provides about 10 hours of continuous use. The modem shuts off automatically when you start and stop using it. They are also compatible with AC adapters.

One nice touch of the Worldport modems is that they have an adapter that allows you to use acoustic couplers. This comes in handy if you happen to be stuck in a hotel room with no modular phone jack (or if you have an affinity for telecommuting via phone booth).

These modems performed well with all the communications software packages I tried. In addition, the Worldport modem is compatible with both Bell and CCITT modems. The CCITT compatibility allows you to connect with computers overseas — no doubt giving some hint as to where the "worldport" name came from. (Most of the world, with the exception of North America, uses the CCITT standard for their modems.)

Of all the modems tested, the two from Worldport performed the best in noisy telephone line situations. Although the noise disturbed the data communications (as it will on almost every modem) the Worldport didn't drop carrier.

The Worldport 1200 lists for $199; the Worldport 2400 lists for $399. (Touchbase Designs, 169 Laurel Ave., Northport, N.Y., 11768; Phone: 516/261-0423.) □

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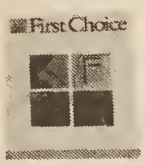

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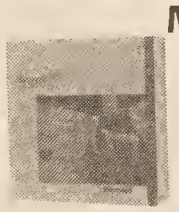

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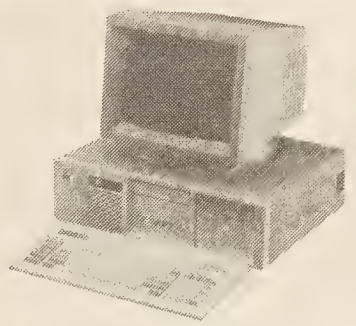

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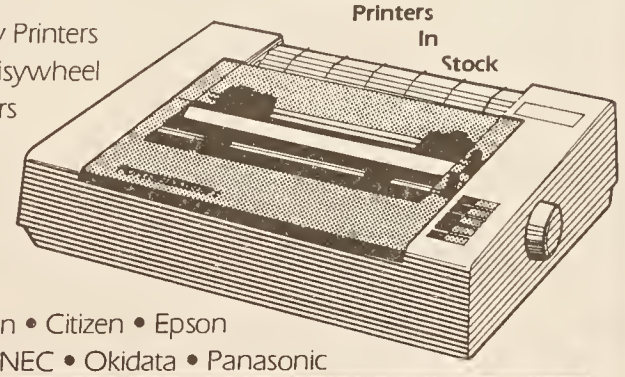

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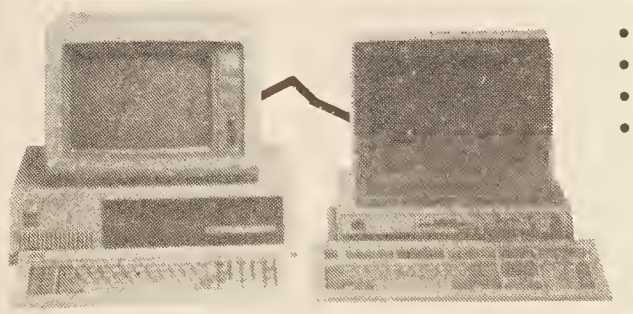

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LINKS

Nonprofits Meet Computers

By Mary Eisenhart

If you're a personal computer user who'd like to help deserving folks into the electronic age, Daniel Ben-Horin wants to talk to you.

Ben-Horin is the director of the San Francisco-based CompuMentor Project, an organization in its second year of providing volunteer help to non-profit organizations struggling to bring their operations up to date using computer technology. He conceived the idea for the project while working as director of Media Alliance, which had set up its own center for providing technical help to fledgling computerists in the form of a training center; the prospective trainees would be taught to use the machines and software at the center, then return to their various work sites.

"In principle," he observes, "that makes a lot of sense. In practice, there *is* something different about computers — it's not like learning how to operate a Xerox machine where you have a one-day session on a fancy Xerox. It's more interactive, it's more open-ended, and it has all this subjective weight. People who are outside computer culture are acutely aware of being outside, and in some ways to try to get in means becoming a beginner again. That's threatening."

"These are people," he continues, "who are working incredibly hard for very little financial reward. They're working with the homeless because they want to help the homeless, not because they want to become computer experts and learn *Lotus* in their spare time."

As part of his own induction into computer literacy, Ben-Horin began accessing The WELL and was amazed by the community spirit which prevailed among the denizens of this online world. "What really struck me about the WELL, from an organizer's standpoint, was this incredible sharing ethos. I would say that a month of having access to people answering my dumb computer questions just removed an emotional block for me. I no longer felt frightened about playing with my computer. It became something I could play with, and then I learned it.

"I just started thinking, what if that kind of information sharing was available to the people who really needed it, and what if these people became big brothers and sisters and were there in sort of a hands-on presence?"

Ben-Horin proposed his plan to the Oakland-based Skaggs Foundation and received a seed grant of $7,500 for a year. In October 1986 he launched a conference on the WELL in which nonprofit organizations could solicit volunteer help from the community of WELLbeings, and has been matching mentors with nonprofits ever since.

CompuMentor's Daniel Ben-Horin: "These are people who are working with the homeless because they want to help the homeless, not because they want to become computer experts and learn Lotus in their spare time."

One of the earliest beneficiaries of the project was San Francisco's DES Action, which supports victims of DES-related medical problems and disseminates information about the problem. It operates out of a tiny office in the Mission District and, at the time they came to the project's attention, its two staffers were being crowded out by a massive donated computer they weren't even sure worked. (The problem of dealing with esoteric donated equipment is frequent, says Ben-Horin, and the equipment sits in the office as an alien and frightening presence. "They've given up their precious space, and also a certain amount of self-confidence. 'Something that big ought to work — it was given to us by friends, what's wrong with us?'")

Ben-Horin posted DES Action's plight on the WELL, and Maurice Weitman came to the rescue. Weitman ascertained that the donated computer was, in fact, not of much use. After some discussion with the organization's directors, he discovered that they were paying a mailing list house nearly $3,000 per year to maintain their member list and print labels quarterly. He also discovered that they had a small grant for purchasing computer equipment.

Weitman helped DES Action get a good price on a Mac Plus, an ImageWriter, a hard disk and some application packages. He got a magnetic tape of the mailing list from the outside service, converted its information to Mac-readable format. As a result, the organization was able to print its own labels in a matter of hours, at a cost of $5 for the blank labels. They also used the Mac for correspondence, newsletter preparation, accounting and a host of other functions.

Other organizations serving a wide variety of needs reported similar success from the efforts of their WELL mentors. Encouraged by these results, Ben-Horin is now expanding the scope of the effort. The CompuMentor Project has now received grants from organizations from Apple Computer to the San Francisco Foundation, and is actively seeking volunteers to assist a broader range of nonprofits — ideally, he says, matching not just needs and skills, but interests, so that mentors assist groups whose work they themselves support.

Using this approach, he hopes, "a small amount of foundation funding can be leveraged into literally millions of dollars" in technical assistance and other support.

The problems nonprofits encounter, he says, are as varied as the groups themselves. Some are not yet computerized at all, and are bewildered by choruses of conflicting advice. "Often they're in the hands of someone like a typesetter who says 'No, you have to get a PC. I can only handle IBM files.' And they get bad information from self-serving vendors." In such a situation, the reassuring presence of someone who can assess their needs and options and steer them toward good products and prices is invaluable.

In other situations, the group may be saddled with obsolete, broken or otherwise orphaned equipment, or several exotic varieties of machines that don't talk to each other. In some cases, they're faced with converting files generated on an ancient computer to something a Mac can read. And in others, they're just plain scared. "Sometimes groups call, and they've got a really pretty trivial question," says Ben-Horin. "And you sort of want to say, 'Read the manual, it's really not that hard.' We don't say that. We say, "Here's a person you can call." And sometimes they don't call, and then we call them later and they've solved the problem for themselves. I think it was just knowing that they had a backup."

Eventually, he'd like to see CompuMentor evolve into a national organization supported by the computer industry itself. "People who get into computers are into the free flow of information. They're into helping, enough of them to make this a viable prospect. The long-range prognosis is to get computer corporations to buy into the idea."

In the short term, CompuMentor needs mentors at all levels of expertise, not just wizards and power users, familiar with a wide variety of systems. At the moment, Ben-Horin says, there's a crying need for MS-DOS and CP/M expertise, as well as an ongoing need for those familiar with obsolete and orphaned machines.

If you're interested, and you think you can help, call Randy Dunagan at (415) 282-4648, or write to CompuMentor, 272A Connecticut, San Francisco, CA 94107. □

In the continuing onslaught of more powerful machines and spiffier software, providing us with ever-better toals and toys, it's easy to lose sight of onather profaundly influentiol ospect of the personol computer revalutian — its impact an the larger cammunity of which computer users usuolly comprise only o smoll froctian.

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The Love Connection:

Word Processing With A TOPS Network

By Robert Beauchamp

Item from the *San Francisco Chronicle*: Commenting in Advertising Age on the success of the movies...which deal with unexpected arrivals, Jonathan Lewin suggests these variations: "The Chicago Bears and a Baby" in which Jim McMahon finds a baby in the huddle, "The Supreme Court and a Baby" in which President Reagan nominates a baby to a seat on the court enabling it to serve for 75 years, and "Infant Compatible" in which a Macintosh and an IBM PC raise a baby with the help of a parenting disk.

When I took on the project of writing a column on connecting Macs to PCs, I never thought of myself as a dating service. As evidenced from the clip above, however, it seems that the problems surrounding Macintosh and PC compatibility are so well known that they gain a spot in a major newspaper along with the likes of Jim McMahon and President Reagan. In the gossip column no less. It also seems that while the computer press may foster an antagonistic rivalry between Macs and DOS machines, the owners of these machines are more interested in getting together and, dare I say it, making connectivity.

When I first introduced Boris, my 286 clone, to Natasha, my Mac Plus, I did so using a TOPS network from Sun Microsystems. TOPS is a lot like those 976 party lines teenagers spend their afternoons on. You can say anything you want and impress whomever you want without things like income, popularity, or personal appearance getting in the way. By directly connecting your computers with TOPS, you can strip away the problems of incompatible disk sizes and formats, allowing you to work on files created by another incompatible machine. Because when you get right down to it, bits and bytes, like love, are universal.

Last month's column detailed the setting up of the hardware necessary to run a TOPS network. This month we'll cover some of the features of TOPS and how to use them to your advantage in one of the areas most in need of Mac to PC connectivity: word processing.

The most common problem that arises from incompatibility has to do with the massive number of word processing files that have been created over the years. As old word processors become, well, old, and are traded for new ones, and as old machines share the same fate, a backlog of files builds up. As we now face the age of the 3-1/2" floppy disk, it's becoming harder and harder to ignore that stack of 5-1/4" wallflowers sitting forlornly in the corner. A TOPS network is extremely useful for those who desire to work with files from older word processors, transfer files from 5-1/4" disks to 3-1/2" disks, or use files created on a DOS machine on their Macintosh.

Each computer on the TOPS network is called a station. Each computer can use files from other stations as a client, and in turn offer its own files to the other computers on the network as a server.

Networking With TOPS

Once up and running TOPS is, for the most part, self-explanatory. There are several concepts, however, that it is important to know before getting started. There are also a few details of operation which are not self-evident and which, once known, make things a lot easier.

Each computer on the TOPS network is called a station. Each station can act as either a client or a server. This means that each computer can use files from other stations as a client, and in turn offer its own files to the other computers on the network as a server. A give-and-take relationship to satisfy the most ardent Oprah watcher.

There are also security features, for those interested in practicing safe computing. Other stations on the network can only access those files that you yourself put on the network, leaving the rest of your files secure. You can provide further security by requiring a password on the files you do put on the network. TOPS also lets you offer your files as read only, making it impossible for those accessing your files to alter them.

To allow others to access your files, you must publish them on the network. To do this on the Macintosh, you pull down the apple menu and choose TOPS. If you've used the Font/DA mover, the TOPS desk accessory will look familiar. On the left side is an icon representing your station and under it the space where the floppy disks, hard disks and RAM disks on your computer are represented. On the right side are the other stations and their corresponding published volumes.

To publish a volume, you simply double click its name and then click publish. It is important to note that you must put your files in a folder in order to publish them. A file by itself is not considered by TOPS to be a volume. As long as a file is in a folder, even a single file, it is considered a volume and thus publishable.

To use files from another station you use the same menu and click mount. Once you've mounted a volume you can pick and choose from among the files contained therein.

At this point you can decide if you want to work with files directly off the other station's disk drive or copy those files to your own drive. From this menu you can also copy a file from your drive to another station's drive.

On the DOS machine, things are a little bit different. Once you've loaded TOPS you can use either the TOPS menu or give commands at the DOS prompt, which is also called the command line. The TOPS menu on the PC doesn't have the same convenient menu as the Macintosh. It is still easy, however, to publish and mount files. The major difference is that once you've mounted a volume from another station, TOPS creates a fictional disk drive to hold those files. If your PC system has a hard disk and two floppy drives then the fictional drive will be called D:. The next mounted volume will be called E: and so on.

Unlike the Mac menu, the PC menu does not allow you to copy files directly from the

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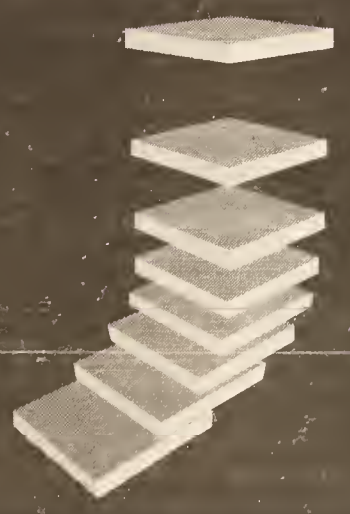

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mounted volume. To copy files you must exit to DOS and then use the DOS copy command, using the D: volume as if it were a drive. For example to copy a file from the mounted volume to your hard disk, you would simply type:

copy d:*filename.spec* c:.

Another aspect of TOPS that you'll have to consider is that it is memory resident. This means that it takes up part of your RAM, leaving less room to run your other applications. If you get an insufficient memory message, you'll have to copy the files you want to work on from the D: drive onto another disk, exit TOPS and reboot your computer.

Word Processing

There are two ways that TOPS can help you with your word processing tasks. Both of them will cause the most hardened and cynical word processors to get down upon their knees and sing hallelujah. The first way is with the help of products from Microsoft, such as *Word*, which is available in both the Macintosh and PC versions. The second is with a utility that comes with TOPS called the TOPS Translator.

Microsoft has paid special attention to the connectivity issue and made *Word* for each machine fully compatible. What this means is that if you're on your Macintosh and want to work with a *Word* file that was created on a DOS machine, all you have to do is open up the file from within *Word*, and it automatically converts to the Mac interface and functions exactly as if it were a Macintosh *Word* file. This eliminates the need to first convert the file into an ASCII file and then open it up again only to find strange little characters left over from the first program's formatting codes. When you open up the *Word* file on the Mac, it is clean and maintains the formatting given to it on the PC.

If you're on a Macintosh and create a file you know someone on the network is going to use in *Word* on the PC, save it in MS-DOS format. This will allow the PC user to use that file as if it was created on a DOS machine.

From the DOS side, things are again done a little differently. When you are about to save a *Word* file on the Mac, it gives you the option of choosing which format you wish to save it in. One of those options is Word (MS-DOS Version). If you know someone on the network is going to use this file in *Word* on the PC, save it in this format. This will allow them to use that file as if was created on a DOS machine.

Since files on the PC, when mounted, are kept on the fictional D: disk, you must press **D: F1** when you are at the load prompt in *Word* on the PC. This gives you a list of those files that are in the mounted volume. You may notice, however, that not all the files, if any, that are on the mounted volume are listed. This is because *Word* on the PC only recognizes those files that have names conforming to the DOS standard. It is very important to remember, therefore, that in order for files to be accessed from within *Word* on the PC *the file names must conform to the DOS eight character-period-extension format*. For example, a file named Notes For Chuck on the Mac, will not be seen by *Word* on the PC, whereas the same file named CHKNOTES.DOC will.

TOPS Translators

The TOPS Translators utility that comes with the Mac version of TOPS is truly a stroke of genius on someone's part. While many new programs, such as *Word*, automatically translate from the Mac to the PC, there are a lot of *WordStar* and *MultiMate* files out there that many people would like to convert to *MacWrite* or *Word*. The TOPS Translator's screen looks again like the Font/DA mover. On one side you have your choice of formats and on the other side the files you wish to format. You simply choose the file and the format and click convert. TOPS Translators also has formats for popular spreadsheets and databases as well.

If you're a word processor who has to deal with incompatible files, new disks or new machines, the TOPS network is a perfect solution. It's one of those systems that actually solves a major productivity problem without creating more problems. Once you have grasped the major concepts and have worked your way through a few easily overcome roadblocks, you'll be well on your way to becoming a network star. You're at least bound to become someone's sweetheart, as you impress them by doing what they thought for sure was impossible.

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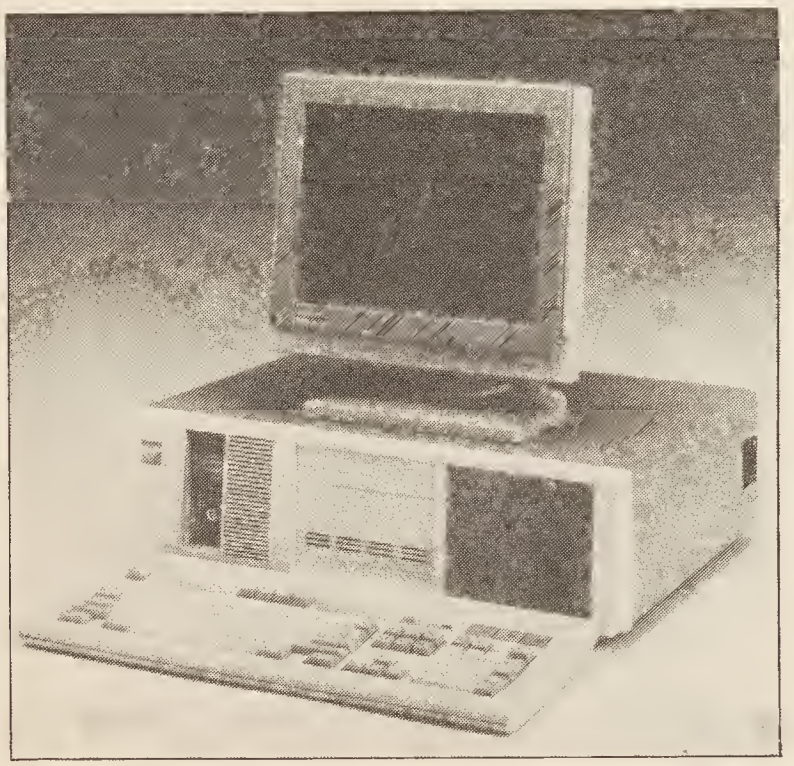

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Computer Currents, March 8, 1988

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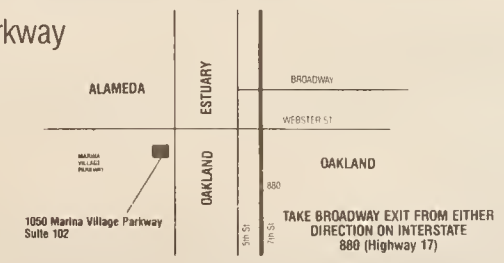
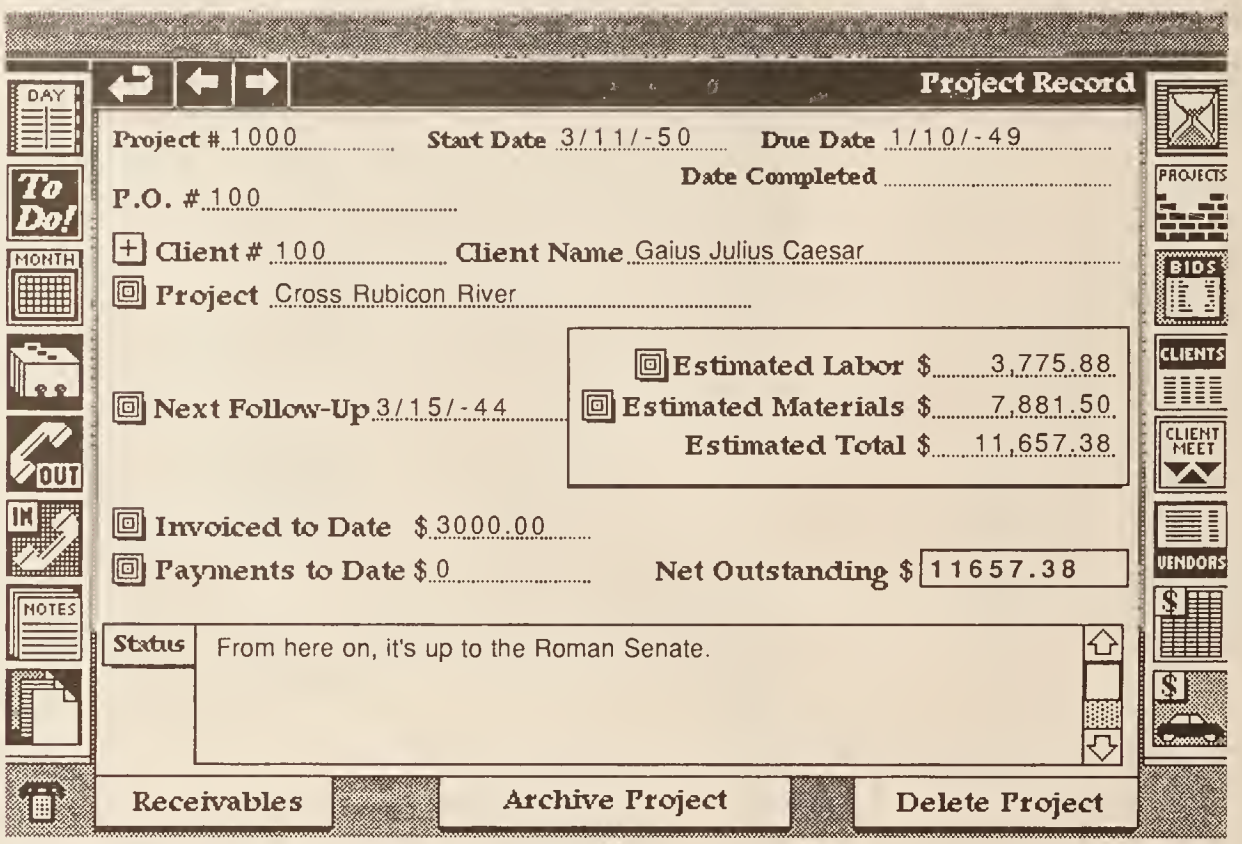
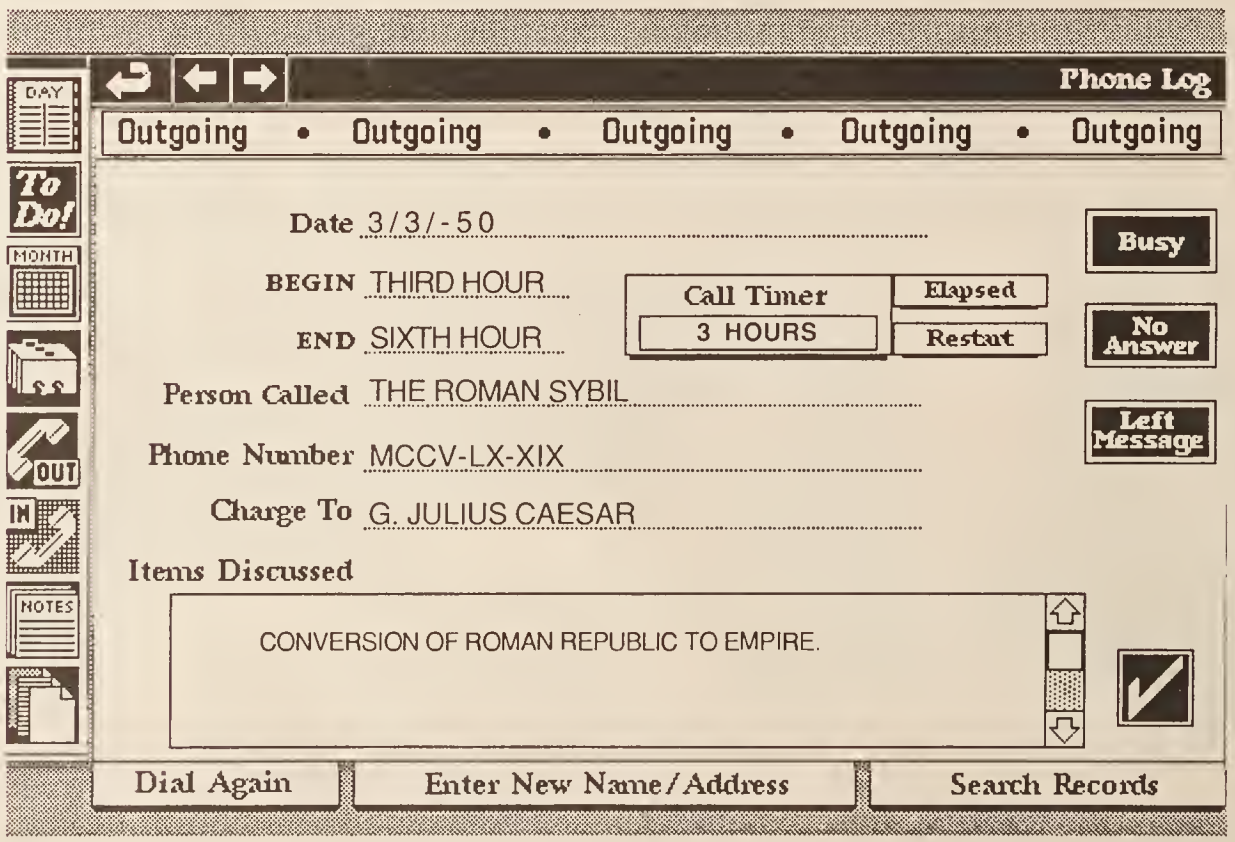


Organize Your Small Business With Focal Point

By Birrell Walsh



Julius Caesar uses Focal Point to plan his political future.



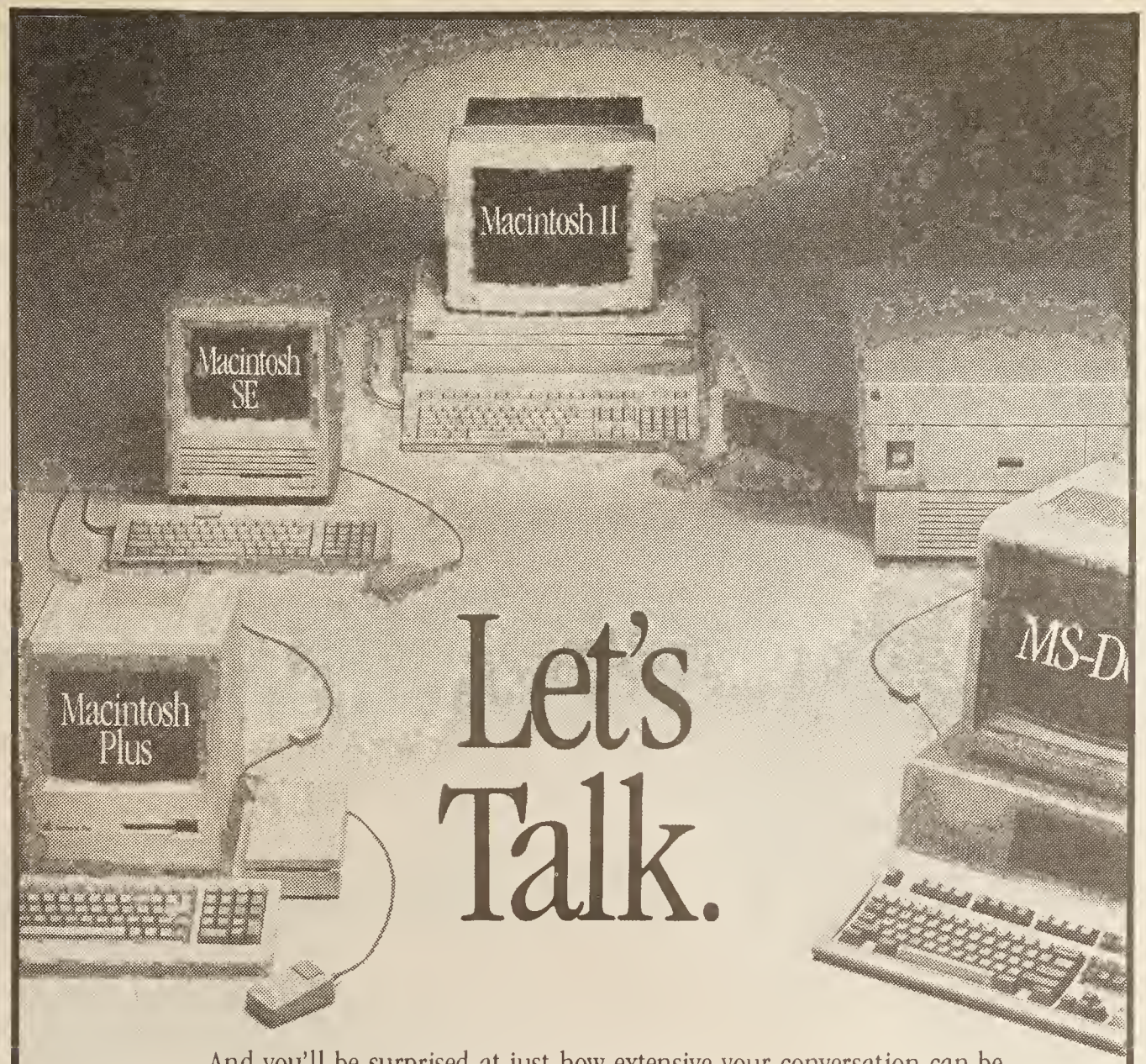
Danny Goodman is the man who wrote the book on *HyperCard*. His *Complete HyperCard Handbook* has sold several hundred thousand copies in its first few months. Now Activision has published Goodman's *Focal Point*, one of the first commercial applications based on *HyperCard*. The program allows anyone to organize a small practice of any sort — consulting, free-lance writing, or any business where the information and contact lists threaten to overwhelm you. *Focal Point* has the virtues, and the vice, of *HyperCard*.

The vice is "too many buttons." The opening screen of *Focal Point* gives way to a screen so full of options as to be daunting in itself. You can go to any of 18 different activities in *Focal Point*, and 16 of them have a button on the datebook screen. In practice, these buttons are very useful. At first glance, though, you wonder if you will ever be able to master it all.

The advantage to the small business user is that each of these buttons represents something that you do every day. There are buttons for incoming and outgoing calls. There is a button that leads you to a very usable address book, with a built-in telephone dialer and a note section for each entry. You have access to a calendar for your day or your month — and they interlock so you can put a reminder into the monthly calendar from the daybook, or vice versa. You can even launch other applications from within *Focal Point*. *Excel*, *Word* or your other favorites can be started within the program; when you leave them, you are returned to *HyperCard*.

One of the advantages of Focal Point is the advantage of HyperCard itself — you can jump from one thing to another. In the still-not-very-multitasking Mac environment, this ease of connection is a blessing.

I was particularly delighted with *Focal Point*'s financial devices. I have never enjoyed keeping



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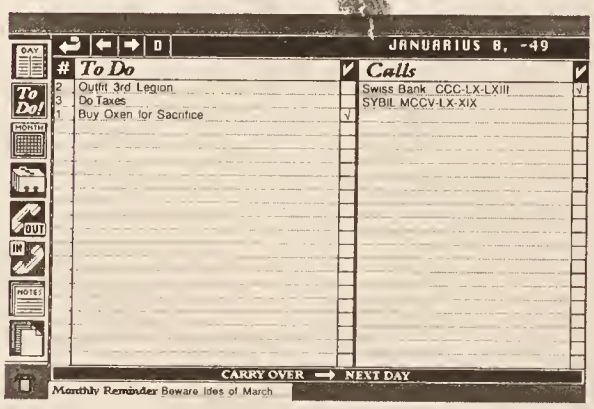
Focal Point has cards for proposals and projects; each includes the facilities to calculate what it will cost you to do the job. One quick click, and an accepted proposal is transformed into a project, ready to go without laboriously re-entering the information.

track of expenses, but you cannot run a business if you don't. *Focal Point* provides a many-featured tracking system for expenses. It has cards for phone calls — ingoing and outgoing — which include a field to let you charge the time to a project. You can keep all your daily and weekly business expense records in *Focal Point* with little grief. *Focal Point* will make summaries for you weekly.

You can use *Focal Point* to plan. It has cards for proposals and projects; each includes the facilities to calculate what it will cost you to do the job. One quick click, and an accepted proposal is transformed into a project, ready to go without laboriously re-entering the information.

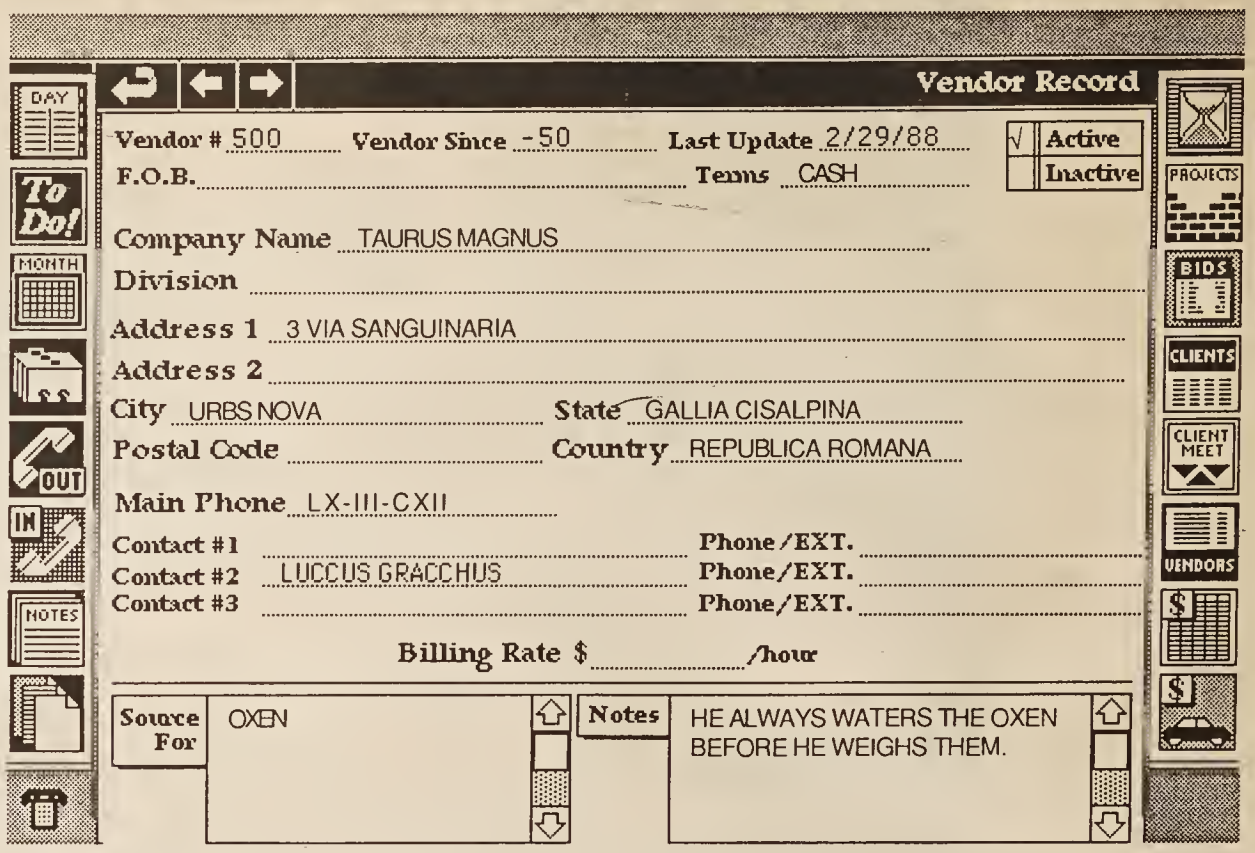
Projects, expenses, invoices — all of this could again overwhelm you with an electronic equivalent of the papers on your desk. But *Focal Point* has a set of interconnecting updates that help to keep things in order. It will make an integrated list of the deadlines of all your projects. It will transfer the totals of your expenses to the master card for a project. Goodman's sometimes complicated scripts go beyond simple linking — they make *Focal Point* an intelligent assistant.

One of the advantages of *Focal Point* is the advantage of *HyperCard* itself — you can jump from one thing to another. In the still-not-very-multitasking Mac environment, this ease of connection is a blessing. It allows you to remember in the middle of a phone call that you want the details of your expenditures. Click on one button, pause a moment, and there you are. In another few clicks, you're back where you were.

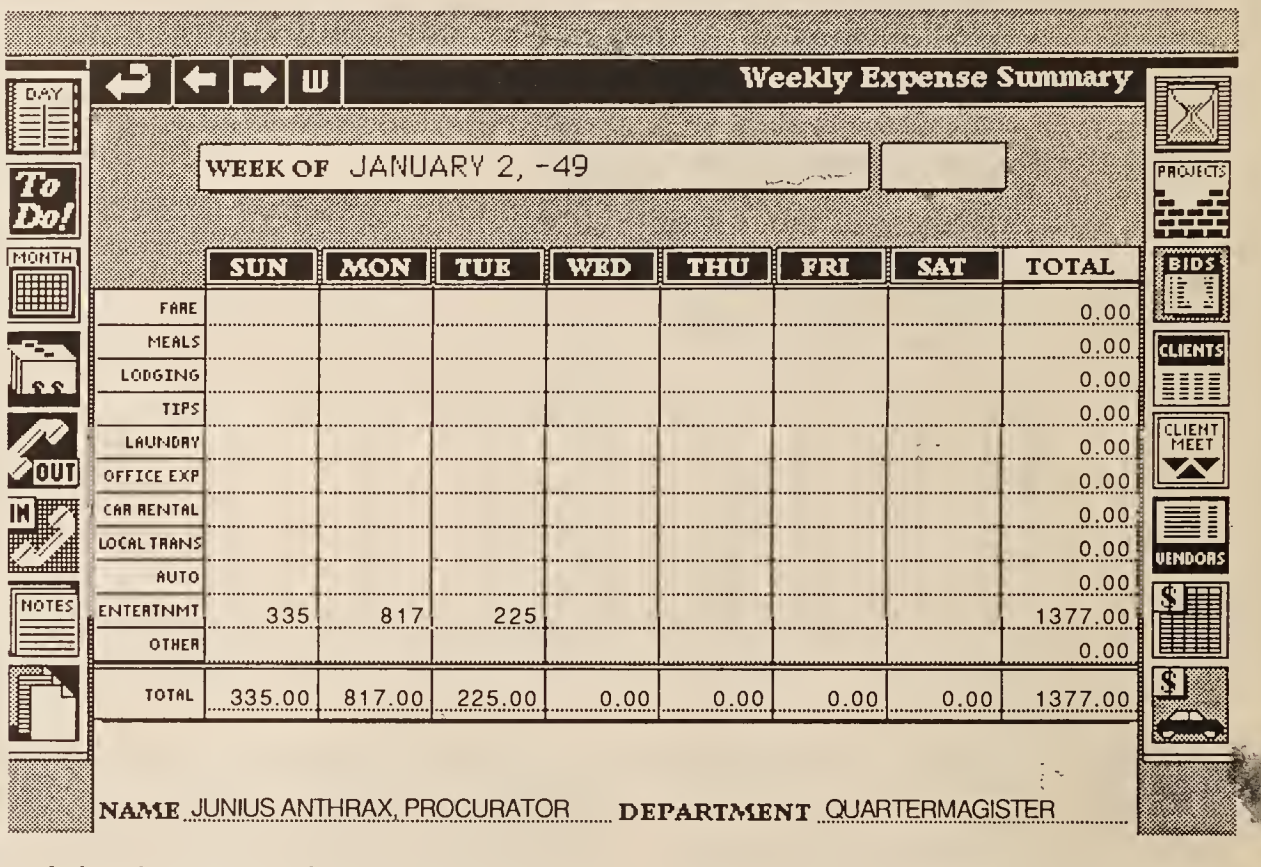


In the highly interrupted lives we lead, this allows us to jump out of one task, take care of an interruption, and then return without losing our place. *Focal Point* allows us to do that with all the scheduling, planning, phone calls and finances of a small business.

Because Danny Goodman wrote *Focal Point*, you get to see how a master uses *HyperCard*'s script language. None of the scripts is locked, so you can look around to your heart's content. Goodman has the program doing things I didn't know were possible in *HyperTalk*. Read the manual, though — it is complex enough that you can go astray if you don't follow instructions. (*Focal Point*, $99.95. Activision, PO Box 7287, Mountain View, CA 94039 415/960-0410.)



Julius uses Focal Point to track his account with a local merchant.



Resource For The Novice HyperTalker

Where do you turn when you want to research programming in *HyperCard*? Programming in HyperTalk ("scripting" in the jargon) is a lot easier than in some languages, but it's still good to have a mentor.

MACazine is a Macintosh journal famous for its critical eye and sharp tongue. It is a magazine to read if you own a Mac and want to sort the good from the bad. It is also full of features by users, and my favorite is Jerry Daniels' "HyperTalking." Daniels has an absolute gift for scripting, and a second gift for explaining the scripting process so that beginners can understand it. If you want to master the *HyperTalk* language with ease and pleasure, get *MACazine* and read his column. (*MACazine*, $21.00 per year PO Box 6815, Syracuse, NY 13217, 800/624-2346.)

Calling All Card Sharks

We will be reviewing products for *HyperCard* and other hypermedia in this column monthly, and we invite you to share information about your creations. Commercial products, shareware and public domain software will all be reviewed. If you want us to look at your work, you can send it to the address below. Make sure you include your address, your phone number (and whether you want that number published), and the price of your stack. We are not guaranteeing to publish everything, but we will look at it all.

You can also leave messages, comments, praise and blame for stackware and *HyperCard* on the WELL (415/332-6106; user ID "birrell") or CompuServe (User ID 72466,3567) or by US Mail to Birrell Walsh, 2440 Sixteenth Street, #165, San Francisco, CA 94103. □

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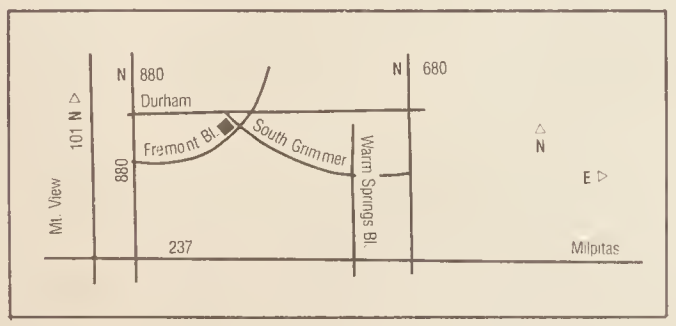

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A Command Line Interpreter For The ST

By David Hawkins

There are times when the fastest way to do a job doesn't involve pointing, clicking, or scrolling. It involves typing. If you want a file that's off in a subdirectory (folder) somewhere, you might not want to go to the trouble of opening and closing several windows to get to it — you just need to type in the filename. But the Atari operating system doesn't have a way for you to type in commands. That's when you need a command line interpreter.

A Command Line Interpreter?

A command line interpreter is a program that gives you a prompt, and then takes your typed line and does something with it. Since most people who do much typing don't type any more than they have to, they tend to use interpreters that take short (cryptic) commands.

And That Means...

Yes, for short, cryptic commands there's nothing like UNIX. There are several command line interpreters for the ST that look like UNIX. One of them is free and is available on some local bulletin boards. It's called *gulam* and it was written by P. Mateti. "Gulam" is an Indian word for "obedient servant."

But That Also Means...

But a command line interpreter can also have a lot of power because it copies UNIX. *Gulam* allows you to write shell scripts, or lists of commands, that it can interpret. I'll give an example after covering some of the commands.

The Commands

The box shows some of the 62 built-in commands that *Gulam* can interpret. Most are standard UNIX commands, and there are a few that are particular to the Atari. For example, the "mson" and "msoff" commands turn the mouse on and off. There may be times when you don't want the mouse to be shown.

The most basic command is **ls**. It provides a listing of files. **ls -l** shows the date of the file, as well as its name and size. The "-l" is an option.

The commands for viewing files are "cat" and "more" — where "cat" provides a continuous display, while "more" pauses every screenful for you to hit the spacebar to continue.

The editor is "ue" which stands for micro-emacs. That means it's a smaller implementation of Emacs, a standard UNIX editor. It is not a word processor, but is good enough for creating plain text files. It allows you to use the mouse to move around in the file.

Dovid Howkins is the host of the Atori conference on The WELL (415/332-6106); send emoil to dhawk. *He con olso be reoched os Dovid Howkins on the Guild (415/771-7062). He hos one of the first Atori ST 1040s sold in Son Froncisco, both monitors, on Okimote 20 color printer, ond disks oll over the room.*

If you want a file that's off in a folder somewhere, you might not want to open and close several windows to get to it — you just need to type in the filename. But the Atari operating system doesn't have a way for you to type in commands. That's when you need a command line interpreter.

Other Handy Commands

cp file1 file2 copies file1 to file2
te is a vt52 terminal emulator
sx file sends a file to another computer using xmodem
rx file receives a file using xmodem protocol
rm file removes the file from the disk
rmdir directory removes the directory (folder) from the disk
mv file1 file2 renames file1 to file2
gem allows you to run a GEM program
grep string file searches a file for a group of characters.

You can use "grep" to find what words you've used in various files. For example, when I wanted to find what "gulam" meant I typed

grep gulam gulam.doc

and it showed me where each usage of "gulam" was in the documentation.

Redirection

What's redirection? Well, normally when you run a program it displays the output on your screen. Redirection allows you to send the results of a program elsewhere — like to the printer or a file. For example, if you wanted to keep track of the files on a disk, *Gulam* would allow you to type

ls -l b: › filelist

and a list of the files on drive B would be placed in the file called filelist. Likewise, if I wanted a record of where the word "gulam" was used in the documentation I'd type

grep gulam gulam.doc › gulam.use

and each line with the word "gulam" would be placed in a file called "gulam.use".

Command Files

Suppose you have a set of commands that you run over and over. *Gulam* allows you to automate the process. You can create a file that will include those commands. For example, suppose at the end of the month you want to remove all backup copies of files — files that end in .BAK, and then create a list of the files on a disk and store that list. The following list of commands in a file would do that for you:

```
rm a:\*.bak
date › filelist
ls -l » filelist
```

The first line removes the backup files. The second line stores today's date in the filelist file. The third adds the list of files to the file.

This example was simple, but *Gulam* allows you to make very complex command files. It includes commands like "if," "foreach," "while," "endif," and "endfor" that can be used with the other *Gulam* commands to do regular work.

Who Are You?

Another feature of UNIX's C shell is aliasing. This allows you to rename commands and add options to them. *Gulam* allows you to do this with the alias command. If you wanted to always get the long listing from "ls," then you could create an alias called "ll" by putting the following in *Gulam*'s startup file.

alias ll 'ls -l'

and then you could just type "ll" to get the long listing. □

These are the 62 built-in commands for Gulam:
alias dm endwhile help more printenv set ue
cat dirc exit history mson pushd setenv unalias
cd dirs fg if msoff pwd source unset
chmod echo fgrep kb mv rehash sx unsetenv
copy egrep foreach lpr peekw ren te which
cp ef format ls pokew rm teexit while
date endfor gem mem popd rmdir time
df endif grep mkdir print rx touch

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The ARP Project: Improving The Amiga's Operating Environment

By Matthew Leeds

There is a conspiracy afoot. A not-so-secret group wants to replace AmigaDOS with their own operating system.

The ARP project is part of a larger plan to improve the Amiga's operating system, to create a consistent user interface for all applications, to insure that AmigaDOS is maintainable by programmers without access to BCPL development tools (the Amiga's operating system was created using a language called BCPL), to reduce the amount of disk space required by AmigaDOS, and to give users more power over their Amiga.

The current AmigaDOS commands in the C: directory have several drawbacks. They have an inconsistent user interface. Some commands accept wildcards, some accept ten filenames as arguments, other accept 20. They also take up quite a bit of disk space. Several have undesirable side effects, such as the Copy command not preserving the date/time stamp on a file.

For all of you who have used other computers, AmigaDOS's strange wildcards have been a source of frustration. The ARP project implements the * as a wildcard character, and also lets you use the UNIX style to state a set of characters to match.

The ARP.library offers an easy to access set of routines that can be shared by applications, and the beginnings of a consistent user interface for the Amiga.

An integral part of the ARP project is the ARP.library. This is the support library for all of the ARP commands. It also offers many commonly used functions for use by developers. The library provides functions for command line parsing, file requests, wildcard pattern matching, resource tracking, and formatted printing. The entire library is written in assembly language, and is about 10K in size.

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

For Amiga users the ARP.library is simple to use. Just copy it to the LIBS: directory on your Workbench disk and forget about it. For programmers, it offers a easy to access set of routines that can be shared by applications, and the beginnings of a consistent user interface for the Amiga.

The current list of C: replacement commands includes:

AddBuffers	
Assign	Break
CD	ChangeTaskPri
Delete	DiskChange
Echo	Else
EndIf	FailAt
FileNote	If
Info	Input
Join	Lab
List	MakeDir
Path	Prompt
Protect	Quit
Relabel	Rename
Search	Set
SetDate	Skip
Sort	Stack
Status	Type
Wait	

These commands are copied to the C: directory to replace the current commands. The current release of the ARP commands is 25K smaller than the commands it replaces, so even with the addition of the ARP.library to your Workbench disk, you save about 15K of disk space. The new ARP commands offer extended functionality, ease of use, and a consistent user interface; they often execute faster than the original AmigaDOS commands.

You can get a copy of the ARP project from a variety of sources. Arced versions can be found on many BBSes; most Amiga user groups keep a copy in their public domain library; several disk-based Amiga magazines have included it in recent issues, or you can order a copy direct from: ARP Support, c/o Microsmiths Inc, POB 561, Cambridge, MA 02140. All of the programs currently in the ARP project are freely distributable, and all are accompanied by excellent documentation on disk.

In Other News...

The long awaited and much heralded *Return To Atlantis* has finally shipped from Electronic Arts. Over three years in development, *RTA* is a role-playing game which, when first announced, promised to bring in a new age of animated graphics and digitized sounds in games. Although the graphics are no longer at the cutting edge of Amiga game imagery, the core of the game is a fascinating look at intrigue and adventure in high-tech surroundings.

Commodore released its financial results for the quarter ending December '87, and the numbers look good. CBM posted a $27.7 million income on a $281.7 million of revenue. This is a 27% increase over a year ago, with the Amiga accounting for 40% of the total revenue. Commodore is claiming an installed base of over 500,000 Amigas.

If you own an A500 or an A2000, you do not have a color composite video output on your Amiga. If you plan on recording your Amiga's graphics on a VCR you will need a video encoder. If you don't need broadcast quality output, an excellent choice for a video encoder is produced by Creative Microsystems. The V-1 is offered in two basic models for the A500 (an external box) and the A2000 (an internal board). Each A500 version connects to the RGB port, and one provides composite video output, and separate chroma and luminance output. The other A500 version also offers RF output. If your VCR will not accept video input you may need this version.

The A2000 versions offer the same options. The A500 versions do not offer a passthrough of the RGB port. I don't recommend using the A500 version on an A2000, as you will not be able to connect anything to the parallel port of the A2000 while the encoder is connected to the RGB port. Get the board version for the A2000.

If you haven't yet gotten a copy of the shareware program *POPCli*, run out to your nearest user group or log onto your favorite BBS and get a copy. It is an essential part of my operating environment. The program's actions are simple: it lets you open a CLI at any time just by pressing two keys on your keyboard. Think of all the times you wanted to check a disk directory, start a CLI-only program, or use a CLI command while you were using some other program that wouldn't let you start a CLI easily.

There are other programs out now that will let you start up a CLI from the keyboard. But *POPCli* is one of the easiest to use, and it offers the additional benefit of including a screen blanker that will keep your monitor from burning an image into the phosphors should you walk away from your Amiga without turning the monitor off.

Along with *POPCli* make sure you get a copy of Runback. This program will let you run CLI-only programs and then close the CLI window you started the program from. No point in cluttering up your screen with errant CLI windows.

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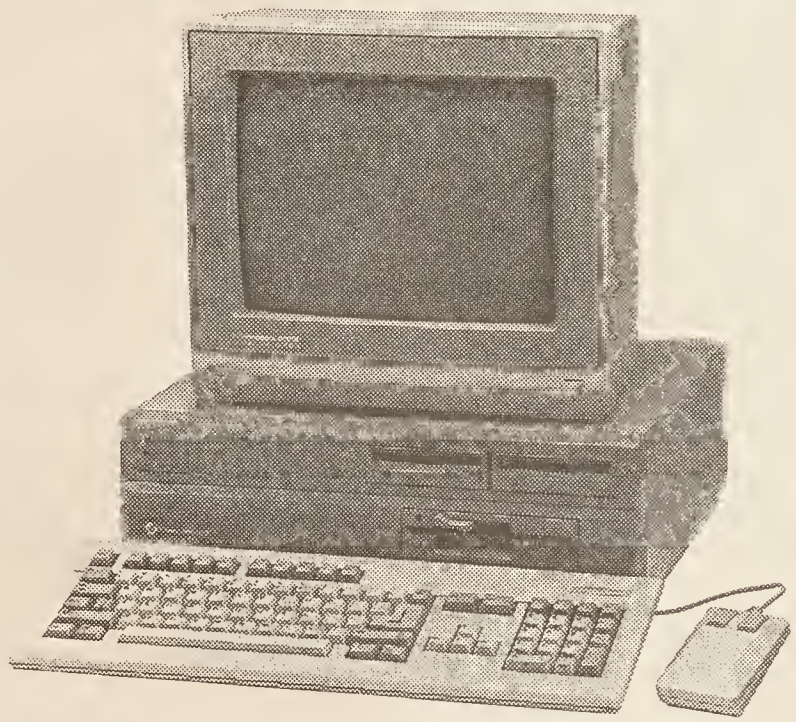

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Thanks For The Memories...

By Mike Markowitz

Apple released the IIGS with only 256K of RAM on the motherboard. For classic 8-bit applications, including *AppleWorks*, this is ample space, but for the new ProDOS 16 environment it is no space at all. The heart of the IIGS is the 65C816 microprocessor chip, which has a 24-bit address bus. Two to the 24 power is 16,777,216, (I just worked it out on the *AppleWorks* spreadsheet) so the potential "address space" of the IIGS is a monstrous 16 megabytes. The present hardware supports about half this amount; Apple only provided the decoding circuitry for eight megabytes. The IIGS motherboard has a special 44-pin "auxiliary" slot for memory expansion.

The IIGS doesn't have the definitive version of its 16-bit operating system yet, but almost all the new applications that exploit its special features require 512K minimum, right out of the box. *Deluxe Paint II* for the IIGS from Electronics Arts requires 768K, and *Paintworks Gold*, recently announced by Activision, will require 1.25 MB! Some recent IIGS programs have been designed to run on 512K, but "recommend" one megabyte if you want to use all the fancy features at once. A "RAM disk" simulating a 3.5" disk drive could require 800K more.

The Apple IIGS Memory Expansion Card

Apple released a basic one-megabyte RAM card along with the introduction of the IIGS. Other card makers have added bells and whistles to their IIGS memory cards to differentiate their products and attract market share.

For most IIGS buyers, price and convenience will be the great selling points for the Apple card. With a list price of $129, the card carried a $50 Apple rebate at this writing, and some dealers were throwing in an additional discount, along with free installation. The card uses standard 256K chips; one bank is filled, and there are three banks of empty sockets. The card has no included software, but it comes with good documentation.

MDIdeas OCTORAM

OCTORAM is the Mack Truck of IIGS memory expansion—a heavy-duty brute with tremendous capacity. When combined with its daughterboard, the OCTORAM ESP, it becomes the Lamborghini as well, with amazing acceleration from a standing start. As you might expect, all this power has a price.

OCTORAM uses memory chips in an unusual form, called SIMM's (single in-line memory modules), which have become standard in the Macintosh world, but are something new to Apple II. SIMM's are strips of eight 256K or one-megabyte DRAM chips mounted on a small circuit board. The OCTORAM board has snap-in slots for eight SIMMs. The SIMMs are set at an angle, so the card does not physically interfere with the neighboring slot inside your IIGS. You cannot mix 256K and 1 MB SIMMs on the same board.

A set of jumper blocks on the board must be properly configured to tell the system how much memory is installed. The board is shipped without any diagnostic software, and documentation is limited to a two-page leaflet.

With 256K installed, the OCTORAM lists for $149.95. Fully populated with 256K SIMMs (to a total of two megabytes on board) the price is $599.95. MDIdeas' list price for the one-megabyte SIMMs is a whopping $350 each. At this rate, a maxed-out 8 MB card would cost $2950! At this writing, some Macintosh memory dealers were advertising 1 MB SIMMs for $199 each, however.

At this time, no known Apple IIGS application requires more than 1.25 MB to run. It is hard to imagine any application for the computer that would use 4, let alone 8 MB of RAM, but future increases in the processor speed of the GS, and the possibility of *HyperCard* stacks and CD-ROM based applications may radically alter this situation over the next two years . . .

In this sense, the OCTORAM is an investment in the future. The OCTORAM ESP, on the other hand, is something very immediately useful. The ESP is a battery-backed static RAM board that plugs into the OCTORAM. Static RAM chips, unlike the cheaper dynamic RAM, draw very little power while storing information. The battery on the card will maintain data for six months with the computer turned off. The battery recharges itself when the computer is powered on, so in normal use it could last up to ten years.

The ESP board is sold in two configurations, 128K (for $180) and 512K (for $390). The 128K board can be upgraded in 64K increments, which list for $35 each. These are low-power 32K × 8 Static RAM chips rated at 120 ns or faster. These chips are extremely static-sensitive (i.e. they can be destroyed by the stray electrical charges that build up on your fingers), so many users will prefer to have them factory-installed, or handled by a dealer.

The ESP board has two jumpers. A "write protect" jumper can be removed if you want to make it impossible to erase the data stored on the card. A "power" jumper interrupts the circuit to the battery (which erases the static RAM chips). The "power" jumper is normally used only when adding or removing chips.

The IIGS treats the ESP's Static RAM as a ROM disk. A special software utility on a 3.5" disk is provided to set up this ROM Disk. A minimal 128K ROM Disk can include ProDOS 8, BASIC.SYSTEM, and the system utilities. A 192K ROM Disk will hold the *AppleWorks* Startup and Program disks. With 512K you can have the full ProDOS 16 Desktop. If you set ROM Disk as your startup device, you can boot directly into your application before the computer monitor has even warmed up. It is a remarkable feeling of power.

For most users, the most serious drawback to the OCTORAM ESP is that it blocks Slot #7 when it is installed. This is often the only free slot a GS user has. Another potential drawback is that you may not always want to boot up directly into *AppleWorks*, or the Desktop, or whatever you have stored on "ROMDisk." If you occasionally want to run DOS 3.3 applications, for example, you would have to go into the Control Panel, change your startup slot, and reboot the Computer. You could also exit to BASIC and start up from the] prompt. This sort of thing ought to be covered in documentation, but MDIdeas provides very little documentation with the card. The product is really aimed at expert users, who are willing to experiment a bit.

MDIdeas is also working on an accelerator board for the IIGS. Called the GSX, it will run at 5.6 Megahertz, with intermediate speeds at 2.8 and 1.0 Megahertz. Eric Wong, VP of Marketing at MDIdeas, describes it as "a very complex board" that will have its own fast RAM, expandable to 1 megabyte. It will be "completely transparent to all software" and will be invoked and controlled by a Desk Accessory. Price and availability were unknown at this writing.

Applied Engineering, the market leader in Apple II expansion products is reportedly working on a IIGS accelerator, but would not comment on future products. It would not be surprising, however, if several IIGS accelerator products showed up at the AppleFest show in Boston in May.

Plugging Away

What, you don't belong to a user group yet? Let me recommend the Big Red Apple Club (423 Norfolk Avenue, Norfolk, Nebraska 68701 (402) 379-4680). These folksy Midwesterners publish a sharp little monthly journal, *Scarlett*. They have a good public domain library and mail-order discounts on software and peripherals. Membership is just $12 a year.

In the neighboring Plains state of Kansas, you find Tom Weishaar's *Open-Apple* (PO Box 7651, Overland Park, Kansas 66207). Something about the prairie environment must promote clear thinking, because this 8-page monthly newsletter contains some of the shrewdest technical insight in the world of Apple II computing. Check it out for $24 a year. □

RESOURCES

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Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. *Copyright © 1988 by Mike Markowitz.*

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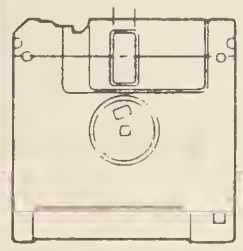

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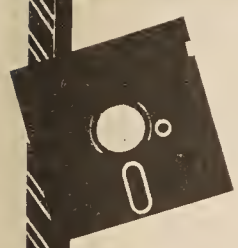

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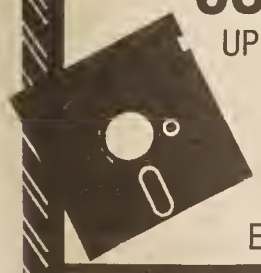

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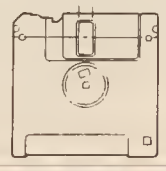

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On The Highly Exaggerated Death Of CP/M, And Other Matters

By Robert D. Athey Jr.

Recent publications by John Dvorak and others call the CP/M computers dead. Again.

So why do I keep getting calls from people about their CP/M problems and questions? It seems that we CP/M users are comparable to the VW bug drivers. We find our machines quite serviceable, fast enough for the jobs we need to do, and quite good for our requirements. Indeed, I find my CP/M computers more dependable than the MS-DOS beasties, and I use the CP/M devices easily as much as the newer machines.

Admittedly, the marketeers have written off the CP/M machines, but they are still useful, and being used by millions of satisfied computerists. Indeed, few vendors are making CP/M machines these days, and few magazines still support their users.

To my mind, the whole problem lies in the fact that small computers are now targeted to the corporate marketplace rather than the individual user (so much for the "personal" computer), and the marketeers must emphasize the new goodie-laden sexy machines, rather than just the simple and useful. Perhaps one day the computer companies will recognize the market for CP/M machines is not dead, as indicated by Kaypro's recent experience. When Kaypro decided to remainder the last of its CP/M machines through C.O.M.B. (resellers of remaindered goods), C.O.M.B. had many more orders than they could fill. Certainly the aftermarket for used CP/M machines is active, too.

Moving Your Computer? Here's An Idea...

Since my office is so cluttered with these all these computers and peripheral devices, I've needed to get organized (especially since I'm moving it!). I've labeled each of the ten or so cables with pressure sensitive tape labels. Each label has both the computer and the target peripheral written on it. The label was put around the wire or on the flat connector. At a user group meeting, I found that this was a novel solution to some, and common practice to others. You never know, do you?

Spreadsheets And Templates Revisited

Over many months, I've been suggesting uses for spreadsheets and their templates. The other day, I happened to think of another one. Crossword puzzles! What is a crossword puzzle but a collection of labeled cells? Obviously, the spreadsheet is the ideal tool for making up crossword puzzles. It's a ready made template! With just a little work, you could set up a Scrabble board, complete with the letter scoring and word scoring bonuses. I'd be interested in that array, if someone has cooked it up. Such a Scrabble game could be run by a sysop with a random letter dealer for the remote players as they go along (POPNET might be a good site for such an experiment). Of course, the player with the anagram program that came with *WordStar* 4 would have a hidden advantage, but...

As part of the new look in my business, I've designed another template for client record keeping. This template is very like the record you see with your name on it in the blood bank or doctor's or dentist's office. Part of the need I have for this template is due to the sliding fee scale I use, as I need to keep track of how many hours have been charged and at what rate. I use the spreadsheet now for the invoices, as I'd shown in an earlier column, but the new template keeps a record of all historical client charges. You'll note they are charged a handling fee for any of my out-of-pocket expenses (the buzz word is really "General and Administrative Fee"), and a service charge for the late (after 30 days) payments. We show the "Client Record" template below. For simplicity, we show only the "b" column calculation formulae, but the "c" through "m" columns would be the same, provided we keep the client for the whole year. We start anew each calendar year, and give the clients fair warning whenever the fees change.

You'll notice the template is very like the invoice I showed earlier, except it has several months' records in columns. Indeed, you can use this to feed one month's charges into the invoice template, provided you use *Perfect Calc* in CP/M or *Lotus/VP-Planner* etc. in MS-DOS. It also looks very like a general income/expense ledger.

One of the nice things about the personal computer and the wide open spreadsheet is that you can devise the specialized form you need just for your own application. The nice thing about *Perfect Calc* is that it allows you to enter these expense/income items as they come up (daily if need be), and with the windows, you can use this as the on-screen basis for the invoice at the end of the month making sure you have all the charges. It is embarrassing to remember another charge two days after you've sent the invoices out.

SCREEN SHOT OF "CLIENT RECORD" TEMPLATE

```
    a          b          c          d          e          f
1
2   Client Name:
3   Client Address:
4
5   Client Phone:
6   Date Started:                     Date Completed:
7
8
9   Month                1          2          3          4          5
10
11  INCOME
12  ------
13  Payment, $
14  Payment, Date
15
16  CHARGES
17  -------
18  Amount Due, $
19  Days late
20  Service Charge, @ 0.05%/day b18*(.0005*b19)
21  ---------- --------- --------- --------- --------- ---------
22  Carryover Total  b20+b18
23
24  Expenses
25  Travel Expenses*
26  Purchased Goods*
27  Equipment Rental*
28  Telephone, Local
29  Telephone, Long Dist.
30  Analyses*
31  Testing*
32  Literature Search*
33  Typist
34  ---------- --------- --------- --------- --------- ---------
35  Expense SubTotal    sum(b25:b33)
36  Expense Surcharge 10%    .1*B35
37  ---------- --------- --------- --------- --------- ---------
38  Expense Total         b36+b35
39
40  Consulting hrs.
41  Hours @ _____A_____/hr. $    b40*A
42  Consulting hrs.
43  Hours @ _____B_____/hr. $    b42*B
44  Consulting hrs.
45  Hours @ _____C_____/hr. $    b44*C
46  Travel Hours @ $25/hr., hrs.
47  Travel Hours @ $25/hr., $    b46*25
48  Expenses, Gen. & Adm., $    b38
49  ---------- --------- --------- --------- --------- ---------
50  TOTAL          b22+b41+b43+b45+b47+b49
51
52  *Copies of receipts on file
```

Ooops...

On to other things, I must make a correction on a comment I made in the discussion of the IMP modem operation software. The transfer rate for XMODEM transfers is 128 *bytes* (not bits) of information, and IMP's improvement is to 1000 *bytes* (again, not bits). I must have written that paragraph very late one night. Fortunately, I have friends who chide me when I'm sloppy, rather than coming after me with a hatchet. I blush and bumble on... □

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541. *Copyright © 1988 by Robert D. Athey Jr. All rights reserved.*

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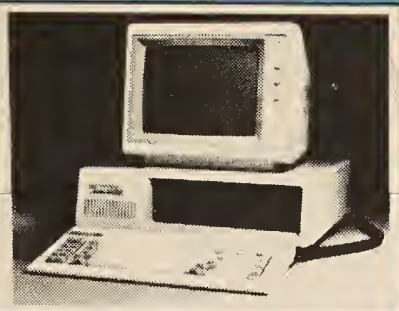

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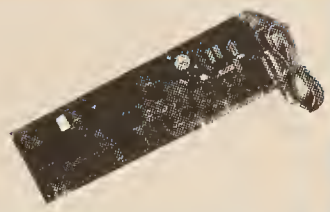

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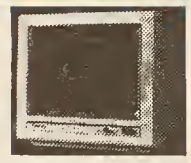

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The Berkeley Macintosh User Group:

Possibly The Mac User's Most Valuable Resource

By Ruth Samberg

In September 1984, when Raines Cohen, Reese Jones, and others totaling 25 people started a student computer group at UC Berkeley, they had little idea it would become one of the most influential user groups in the country. They joined together with the goals of education and support for users of the then-new Macintosh computers, bridging a gap between developers and the consumer.

The volunteer nature of the organization allowed for trustworthy advice. Founding member Steve Costa suggests their group grew rapidly because people needed expertise, and BMUG offered a place where one could "actually go to talk to people, exchange information, discuss news, and stay informed." Now individual as well as corporate users depend more than ever on BMUG's appraisals and recommendations. Although the Berkeley Macintosh User Group has grown to nearly 4,000 members nationwide, its approach remains personal, unpretentious and unswayed by commercial interest. They are continuing to expand in pace with constant developments in Macintosh technology.

More Than Just A User Group

User groups are invaluable sources of computer information as their popularity will attest; there are an estimated 800 recognized Macintosh groups, according to Apple Computer. Members of these nonprofit clubs (for which you pay minimal dues) usually gain access to a library of public domain and user-supported software, a newsletter containing reviews and commentary on the latest products, an electronic bulletin board system to exchange messages on, and a general meeting fostering diverse discussion .

While many groups offer these attractive features, BMUG stands out from other collectives for its size and effectiveness. It's considered the third largest user group in the US. It enjoys a particularly active membership, including the participation of experts in highly valuable computer specialties such as data retrieval. Their independent, candid words are very important to Mac users, who still depend heavily on word of mouth input.

The main meeting draws 200-300 people, considered to be "one of the toughest audiences in the Macintosh world." Vendors have come to be aware of the power of BMUG's opinions and attend bearing the gifts of presentations. They have learned to respect the unabashed opinions of these critics — because users do. If a good impression is made, a writeup in the BMUG newsletter carries tremendous weight among Mac users.

The speaker's time is dominated by questions and answers; these presentations continually update the group's collective knowledge of the group and allow them to keep their users up to date as well. BMUG's main meeting is almost an overwhelming experience — people speak out from all corners of the hall, agreeing and disagreeing, reporting experiences. There is heavy discussion and often some healthy contradiction. Ideas for topics are welcome.

More permanent and substantial than the meetings, BMUG's "newsletter" is its most extensive effort. Published twice yearly, this hefty volume includes 300 pages of articles and collected criticism on hardware, software, books, games, etc. Contributed by BMUG's members and extended family, it is written from heartfelt experience; reviews are often painfully critical and always refreshingly objective, as some of the titles indicate: "MicroTest II Gets A C-" or "What is a Database Program: What Is One Good For?" Out to impress no one, members who contribute articles are proud that they accept no financial support and can be blunt if they like. Their newsletter provides sense and not hype. It is a good place to get the rundown in the areas of beginner's aids, hardware, hacking, information tools, telecomm, etc., plus general computer information.

As a service to its members, BMUG also sells products at cost at its meetings and from the office. BMUG has a thriving developer community among its members and develops its

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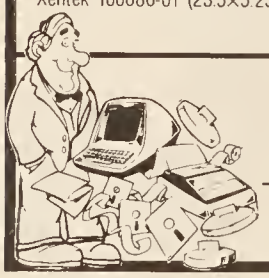

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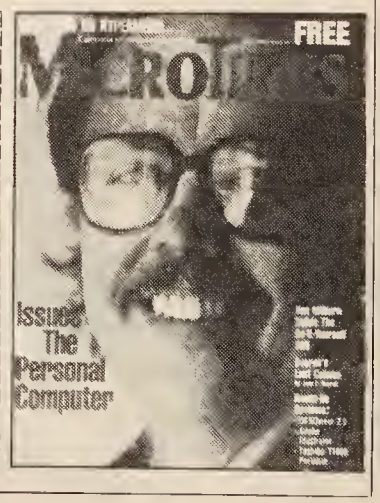

own products, but since BMUG is strictly nonprofit, they avoid competing with any commercial company in the marketplace. BMUG's products are usually not yet commercially marketed and would not otherwise be available. The group's belief in a product is based on an interest in usefulness rather than profitability.

BMUG marketed the MacRecorder II sound digitizer and the BMUGNet (now PhoneNet) network cabling system until they became successful commercial products. (They're now marketed by Farallon Computing.) In the past they have supported disks, hardware kits and cables, but once the commercial market moves into an area, BMUG moves out. In the newsletter Stephen Howard and Raines Cohen state that their goal is "to fill gaps in the market wherever we can and still benefit the user."

As a California and Federal nonprofit corporation, the Berkeley Macintosh User Group claims a cash flow of over a quarter of a million dollars a year, but only pennies in net income. BMUG is entirely member supported and run, accepting no advertising and no additional funding from companies or foundations. Their main purpose is educating people, not making profit, and they're proud of this.

Support, Innovation, Information Exchange

BMUG's new program RAP (registration assistance program) now pays the postage and forwards checks to the authors of user supported software. User-supported software or shareware differs from free public domain software in that the developer is able to offer this software at a very minimal price because the cost of advertising, distribution, and dealer markups is not passed on. BMUG acts to distribute this important software through its library and BBS system, allowing more people to operate businesses at the cutting edge of technology and at minimal cost. By doing this they are also trying to protect its future. Payment for shareware is by the honor system. When people don't bother to send the small royalty that keeps the authors in business, this endangers the future of small developers. The RAP program is helping to keep shareware alive.

BMUG works to make information more accessible to all users, not just members. They share information with other user groups via many organized routes as well as informal article exchanges. As Raines Cohen, one of the founders, puts it, "There really is no need for every group to reinvent the wheel." In light of the original goal of "giving information away," BMUG recently joined and is supporting the formation of AAIN (Apple Ambassadors' Information Network), an exchange program between user groups for written and software material. Plans like these cut costs of transferring information, and BMUG will pass the materials on to other smaller user groups for a far smaller cost. BMUG also maintains accounts on many national networks such as Delphi, The WELL, Portal, etc. for the purpose of tapping into extensive information sources and making current resources available for its members.

BMUG's office contains one of the largest and most current software libraries. It is full of the best shareware and public domain applications, utilities, fonts, desk accessories, templates, etc. All programs are tested extensively before being put in the library to eliminate programs that are destructive or useless. The library contains over 150 disks, each containing an average of 20 major items, and it's growing. Soon to come, making the ever-growing lists of program names into some more useful advantage, is an encyclopedic Shareware Directory. It will explain where a program can be found and evaluate its uses and problems. The directory will be sold at cost in true user group fashion. The BMUG software library is made available to launch new bulletin boards. Call for more information.

No matter what the day or time, BMUG's BBS is a good place to search for answers when problems arise. This impressive system allows those with modems to ask questions on line and reach messages from as far away as the Orient. Because the BMUG BBS hooks into Fido Net, a system that links many user groups' lines together, one can reach a whole conglomeration of BBS users. As Cohen explains, "the little systems call each other." A message coming from Israel will come via BBSes in Chicago, and New York. Because this kind of network does not run off one mainframe computer, its economical to run. The heavily-used BBS is BMUG's most frequently-accessed service; at (415) 849-BMUG(2684) the BBS is used around the clock.

Some kind of BMUG meeting is held every day of the week except Friday and Sunday. Most meetings are free and open to the public. For the calendar call anytime: (415) 849-9114 for a recorded message. The main meeting is held Thursday evening at the Physical Science Lecture Hall near the east gate on the U. C. Berkeley Campus.

If you haven't time for introductions but want special focused information and discussion in a social atmosphere, BMUG's SIGs (special interest groups) are small informal meetings designed to cover interests in a specific area. There are at present numerous organized groups, ranging in focus from The Beginning User to BEMUSE, the music SIG, and including exciting current crowd pleasers such as a *HyperCard* Browsing SIG, a *HyperCard* Scripting SIG, the Design and Graphics SIG, and a new A/UX SIG. And of course there is a beginners' SIG as well. If these don't support your needs, BMUG will help you start your own group on any topic there is interest in. ☐

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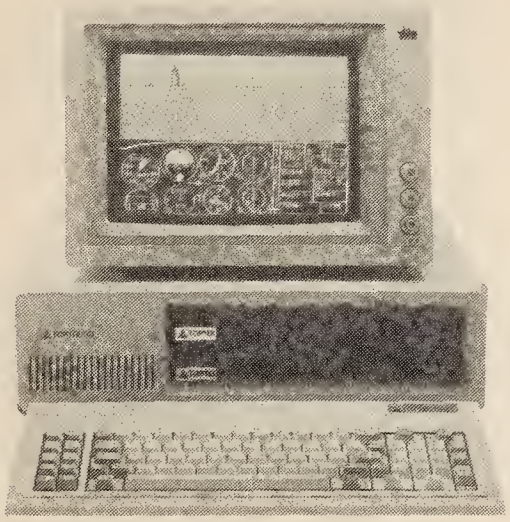

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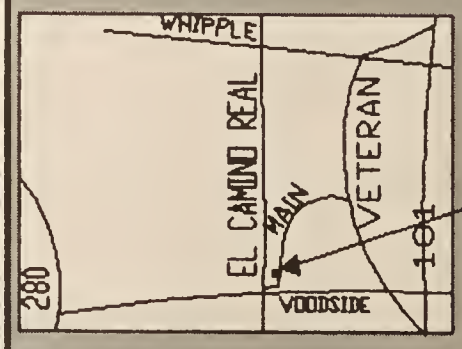

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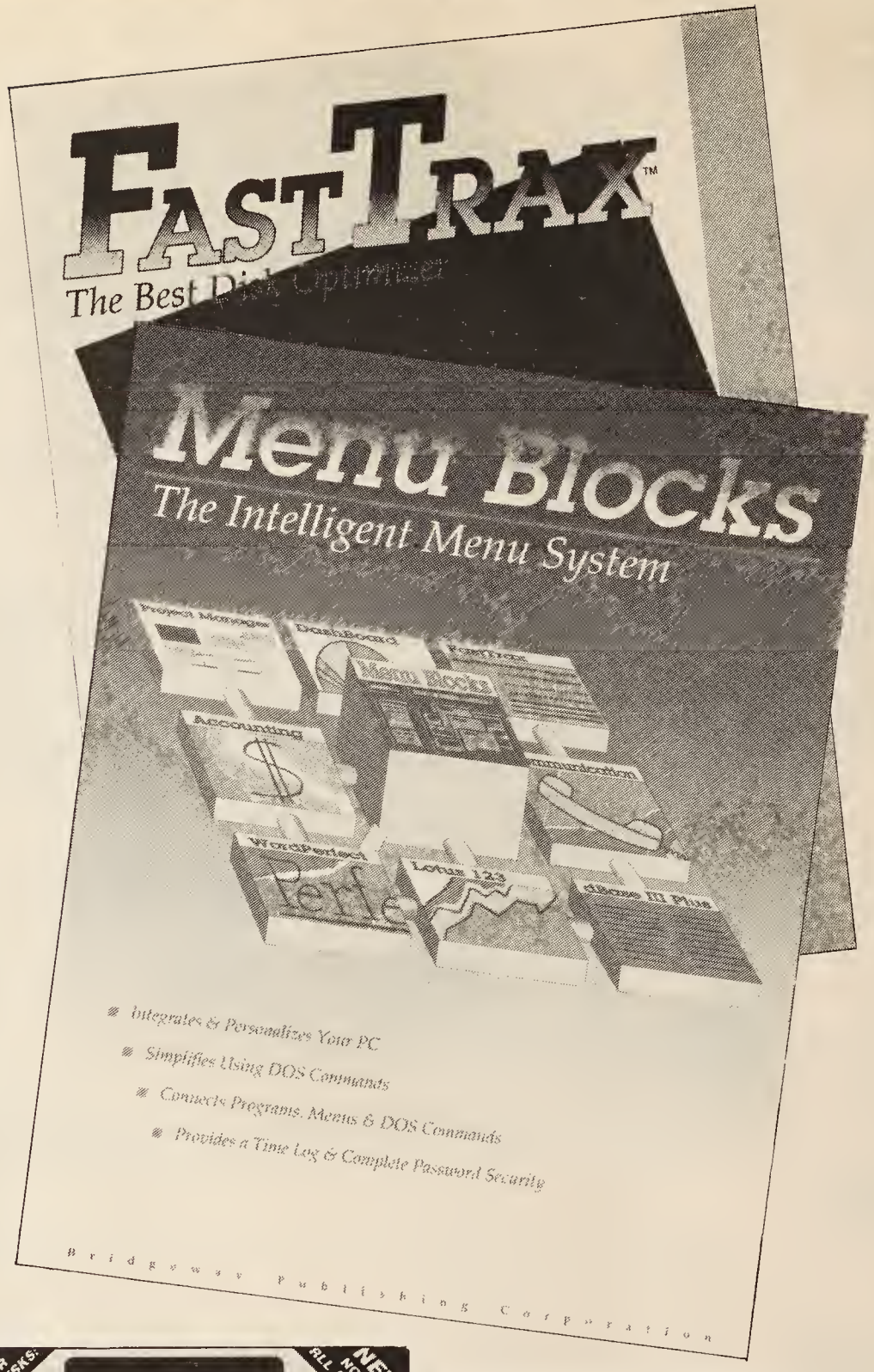

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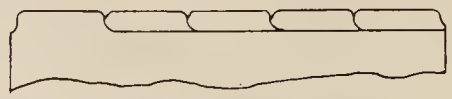

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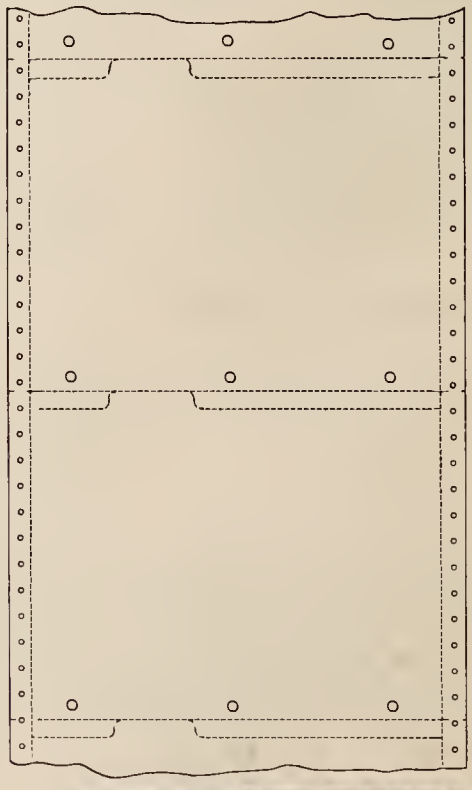

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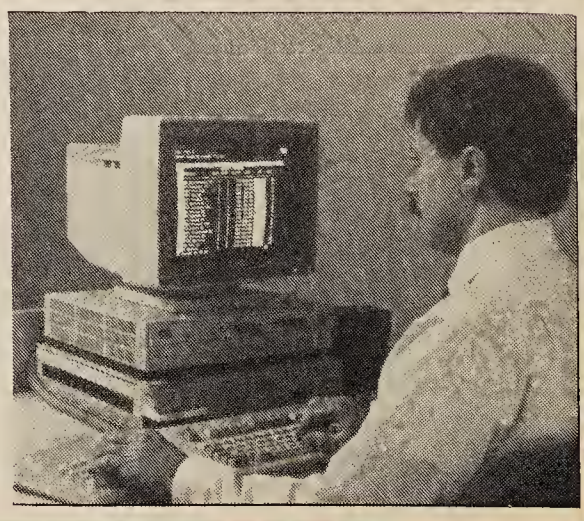

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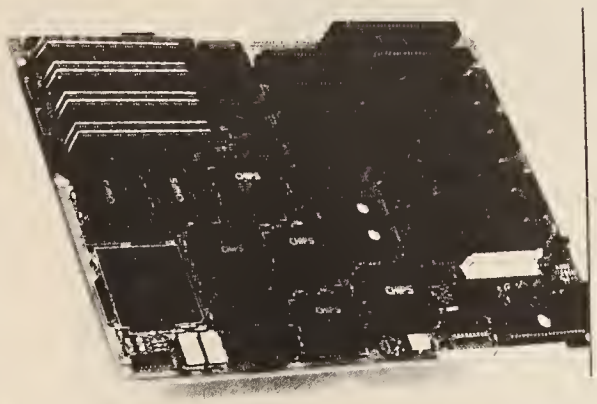

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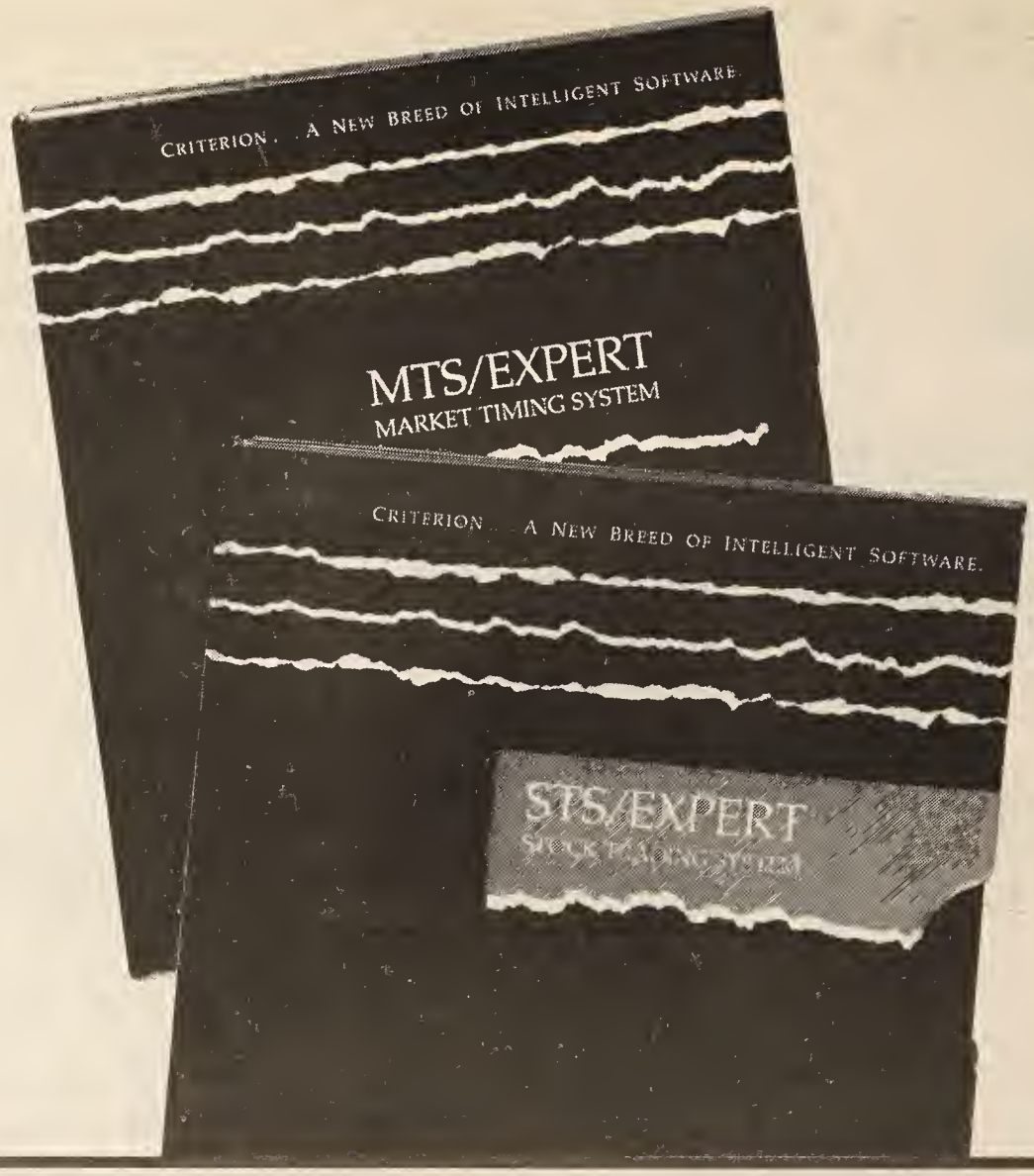

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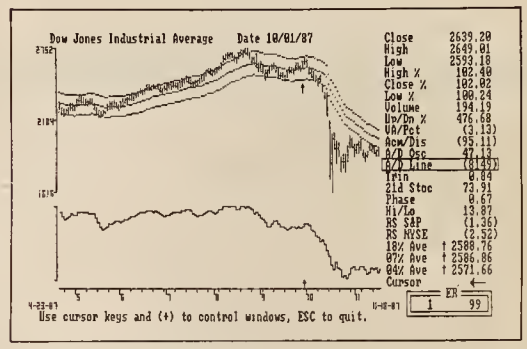

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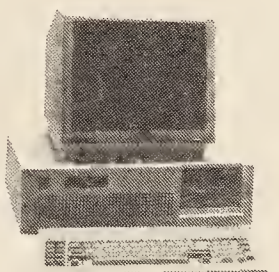

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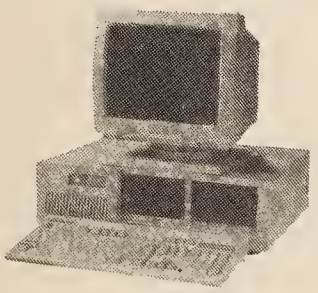

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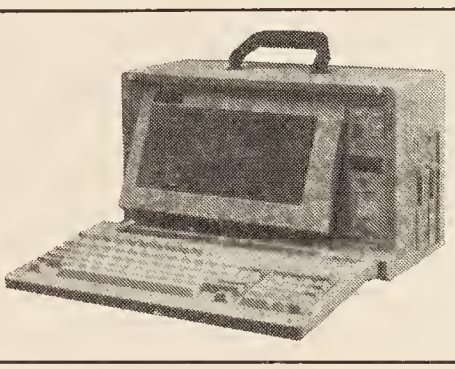

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USER GROUP NETWORK By Mary Eisenhart

Before we get on with this month's mail, I'd like to observe that once again it's **Computer Faire** Time. This annual hoopla is always a great place to check out new products and interesting conferences, with vendors and users out in force and bargains and entertainment galore. The event runs from April 7 to April 10 at San Francisco's Moscone Center, and we of *MicroTimes* heartily encourage any and all of you folks to stop by and say hello.

This month we received a letter from **Paul Goodwin** of Covina. Paul, it seems, recently acquired a spiffy new Epson Geneva Laptop and went in search of user groups. He found the **Cursor Club Epson** of San Dimas in our listings, attempted to call them, and was informed by the nice woman who now owned the phone number in question that the Cursor Club was no more. He called the BBS number and got no answer.

"I know it must be hard to keep up with all the groups listed in your magazine," says Paul, "but do you have any idea if this group is still in operation? Any help you can give me would be appreciated—the next closest group is about 30 miles away."

Well, the Cursor Club has obviously not kept us posted on its movements, but not for nothing do we call this User Group Network. So if anybody knows about Epson groups in the Covina area, whether or not the Cursor Club is among them, please give Paul a call at (818)332-6917, and you will reap his and my heartfelt thanks.

It's also been a fairly active month on the orphan computer front—for example, I had quite a nice extended conversation with a gentleman who'd read my review of Sun Remarketing's upgraded Lisas and was going through major soul-searching about whether it was time to replace his beloved QX-10 running *Valdocs*. . .

Calvin Demmon, who wrote to us some time ago about **PLUG**, the **Plus/4 Users' Group**, sends along the news that the group now has over 800 members. The Plus/4, you may recall, was one of Commodore's more ephemeral machines, which ended its brief career by being sold at rock-bottom prices to people who discovered shortly thereafter that there was essentially no software for it. "Probably the most frustrating thing for a new Plus/4 user is trying to find out where to get information and software—which is why we started PLUG," says Calvin. So if you're one of those people who got a great deal on one of these machines and are now trying to figure out what to do next, Calvin encourages you to contact PLUG at Box 1001, Monterey, CA 93942. Admitting he may live to regret this, Calvin also passes along his phone number, which is (408)372-9090.

Victor users, while not precisely orphaned, have had to deal with a few vicissitudes in their time, so for their benefit we pass along this word from **Clay J. Claiborne Jr.** of Los Angeles. Clay's the manager of Cosmos Engineering Company in LA, which is an authorized Victor dealer and provides a meeting site for the **West LA Victor User Group**; he'd like you to know that Cosmos offers a full range of Victor support, repair, and new products, including a 48-hour turnaround on all Victor 9000 repairs. Clay sends along a Cosmos brochure which makes it evident that these guys are serious about their Victors: "We realize that many Victor 9000 owners and users are being forced to move over to IBM PC compatible systems by software availability, institutional pressures, and many other reasons. As Victor users we have come to expect more than the IBM standard offers. The 9000 gave us more disk space, faster processing, and a better screen. "

You get the idea. Victor folks in need of support or service, give Cosmos a call at (213)930-2540.

Reynolds, the assistant secretary of **TUGNET**, sends this update. The group's new president is **Lowell Morrison**, who can be reached at (818)894-7268. Lowell replaces **Mike Faith**, who has departed for Chicago. TUGNET is a technically-oriented group with an emphasis on MS-DOS; if you'd like to write for more info, their address is TUGNET, 12125 Riverside Drive, Suite #205, North Hollywood, CA 91607. The group is in the process of changing meeting locations from the Valley Plaza Community Center, so call for current meeting time and date.

Larry Blair of Long Beach announces a couple of changes on the local Commodore front. The **C.U.B.E.** group now meets at the Mid Cities National Bank at the northeast corner of Lakewood and Bellflower in the city of Bellflower at 7:30 pm on the first and third Mondays of the month. Meanwhile, Larry is pleased to report that he's the president of a brand new Amiga group, the **Long Beach Amiga User's Group**. Says he, "It is strictly Amiga and meets the third Sunday of every month from 1 pm to 4 pm. The meeting is held in the Mid Cities National Bank on the northeast corner of Lakewood and Artesia in Bellflower." The club has a large public domain software library and its own BBS; Larry invites your calls between 10 am and 1 pm at (213)422-8226 if you'd like more information.

Loyd Cribbs of the **San Francisco Personal Computer Users Group** offers a preview of coming attractions: the March meeting on the 21st will feature a presentation by SFPCUG member **Debbie Norling**, who writes speaking programs for the visually impaired, on computer speech synthesis. The April 18 meeting will feature a File Program Shootout, with representatives from *Rapid File*, *Q&A*, and *AskSAM* presenting the fine points of their software; other companies may also be on hand. If you've got questions about flat-file databases, circle April 18 on your calendar. Meetings are held at 8 pm in Room 1, Building A at Fort Mason Center in SF. SIG meetings begin at 7 pm, as do software sales. If you'd like to know more, Loyd's the publicity chairman, so give him a call at (415)751-5219.

The **Bay Area AT&T PC Users Group**, meanwhile, will feature a presentation by **Samna** of its *Word-4* text editor at the group's March 2 meeting in Oakland. The April meeting is slated for San Francisco with no agenda determined as yet; call **Bob Larsen** (408)224-4422, **Harry Dill** (415)694-6530, or **Joe Lipsig** (408)733-6522 for further info. While the group is currently meeting at various locations in the Bay Area, they're also encountering strong interest in starting an independent group in the San Jose area, so call Bob, Harry or Joe for the latest news on this effort.

In BBS news, **Ben Gardiner**, who's been running the free-of-charge **AIDS BBS** in San Francisco since its inception, informs us that the board is now a multi-line system thanks to the donation of a XENIX-based computer from the **Altos Foundation.** As you may recall, the AIDS BBS is the nation's oldest free BBS on AIDS, offering current information, historic documents, an extensive resource list, and discussion, and may be accessed at (415)626-1246.

The board's operation has been greatly enhanced by its new software, written by UNIX programmer **Mark Pearson**; in celebration of this fact, the board is sponsoring a contest to name the conferencing program. Something nice and catchy like Fido or Opus, which are already taken. If you're the first prize winner, Ben and Mark will take you to dinner; other prizes include a box of diskettes, video rental, printer cables, good food, etc. Entries may be posted to the email section of the BBS, or print your suggestion clearly on a piece of paper and mail it to AIDS Info BBS, P.O. Box 1528, San Francisco, CA 94101, with "Attention: Contest" on the envelope. Ben requests that you be sure to include your return address, and notes that entries become the property of the AIDS BBS and will not be returned. Winners will be notified and given the opportunity to choose their prize.

Roel Sarceno happily announces that his **Video ViSion BBS** (415/366-6409) has recently undergone a major upgrade. It now offers 16 file transfer protocols including ZMODEM, live online games, 80 megabytes of storage, and a spiffy new US Robotics modem which supports 300, 1200, 2400 and

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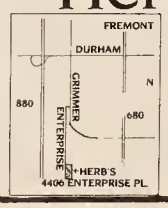

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Finally, from the **Grateful Dead Conference on The WELL** (415/332-6106) comes word from **James (Captain Trips) Scofield** that **Klaus and Gretchen Bender's Dead Board** in Pennsylvania has recovered from its recent equipment problems and is now running happily at (717)677-9573. James has a board himself, **Terrapin Station**, also on the East Coast at (203)656-0134.

That's it for this time. Please keep that mail coming in, Snail to User Group Network, 5951 Canning Street, Oakland, CA 94609 and e- to microx on The WELL. See you next month, and also at the Faire.

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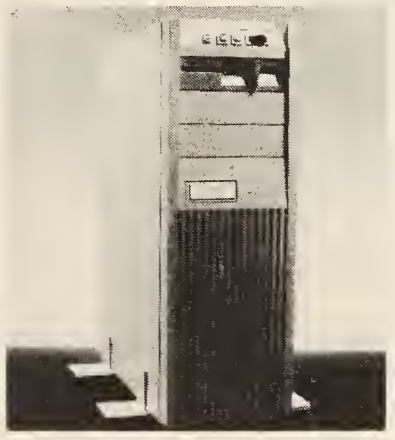

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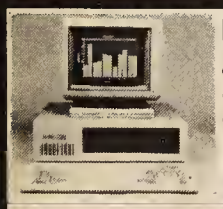

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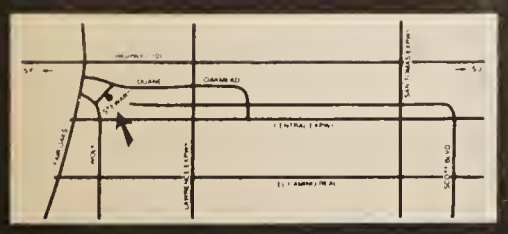

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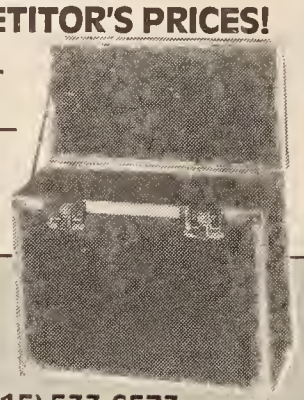

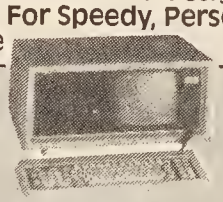

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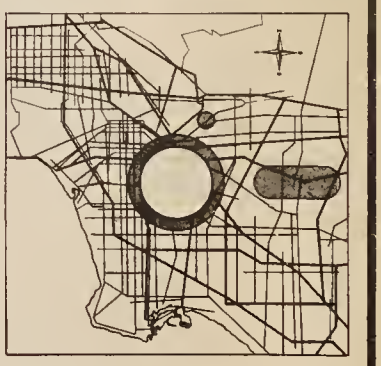

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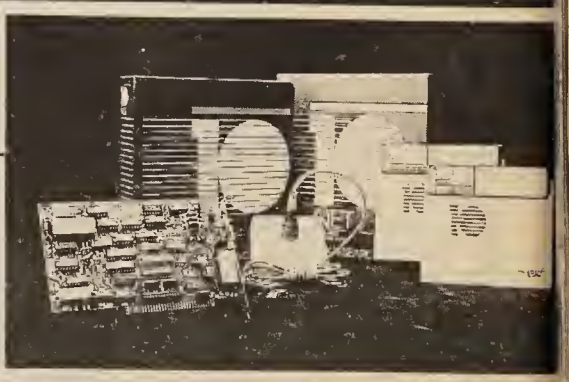

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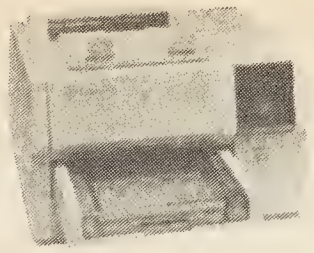

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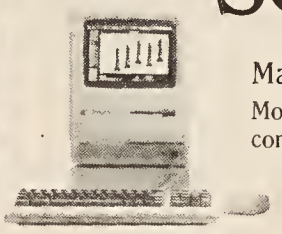

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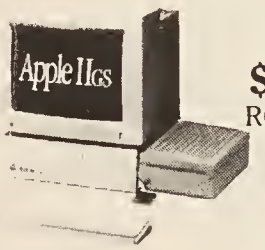

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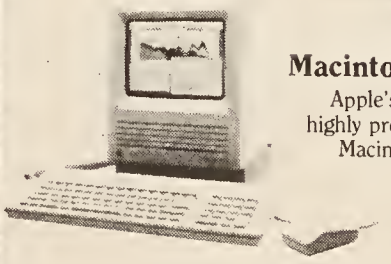

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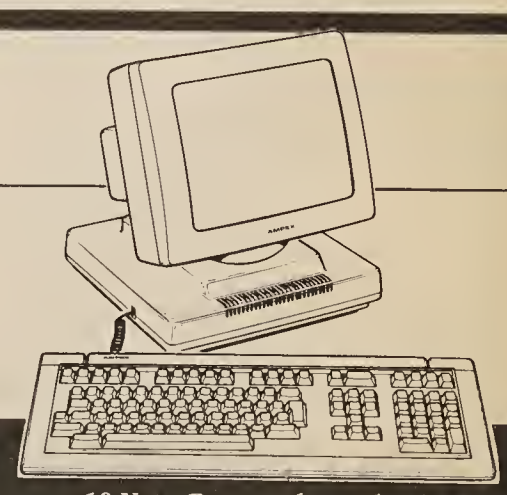

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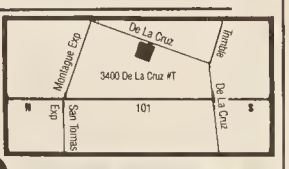

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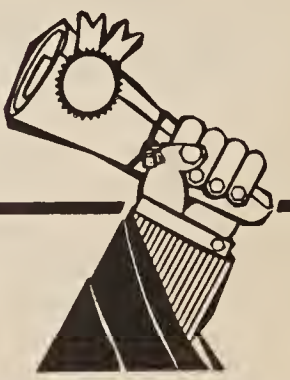

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SF Robotics Society. Meetings: 2nd Mon. Homestead Savings, Community Hall, 5757 Geary (at 22nd), SF. Guest speaker, developers' roundtable.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing.

AI Expert Systems for-Business (ESB). Meetings: 1st & 2nd Sun. San Francisco. Business PC expert system solutions. Determine market opportunities, group research projects. 564-6699.

PC Publishers of San Francisco. Desktop Publishing. Ventura, PC Pagemaker & others. Call (415) 661-9270.

Silicon Valley Computer Society. Contact Kent Stafford (408) 286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Association For Women In Computing. For information call (415) 655-3110 or write to 41 Sutter Street, Suite 1044, San Francisco, CA 94104.

MIDICRUZ Computer and Music Users. Meetings: 1st Thurs. 7:30 PM 200 Seventh Ave. Suite 225, Santa Cruz, CA 95062. Contact Robert at (408) 476-8464.

Bay Area Desktop Publishing Users Group. Meetings: each Tues. 7 PM Spats Restaurant, 1974 Shattuck Ave., Berkeley, CA.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.- odd months Genealogical Society Library, San Francisco.

USER GROUPS

AMIGA

Amiga Addicts Anonymous (AAA). Newsletter, public domain library, demonstrations.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs. 5-7 PM Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri. Write to P.O. Box 1863, Fremont CA 94538 for more info.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs. 8 PM Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

Northern California Amiga Club. Meetings: 2nd. Sat. 1:30 PM Business Incubator, 4311 Airport Rd., Redding, CA. $15/yr., monthly newsletter, access to PD disk library, SIG's & support.

SMAUG — Salinas-Monterey Amiga Users Group. Meetings: 3rd Tues. 7 PM Seaside Library, 550 Harcourt Ave., Seaside, CA.

APL

APLBUG (APL Bay Area Users Group). Meetings: 2nd Mon. I.P. Sharp Offices, 425 Sherman Ave., Ste. 200, 3 blks SW of Caltrain depot.

APPLE

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat. 10 AM Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

A.P.P.L.E. Co-op. Meetings: National User Group. Call-A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206) 251-5222 for more info.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

San Leandro Apple Eaters Users Group, Apple II Users Group. Meetings: 1st Thurs. San Leandro High School, Rm. 213, San Leandro, CA. New owners and experienced users welcome. AppleWorks (TAWUG), software & telecommunications SIG's meet monthly. Newsletter.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401,San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Tri-City Apple II UG. Meetings: 3rd Thurs. 7 PM Casa Colina, 50 N. Hill Ave., Pasadena, CA

ATARI

Bay Area Atari Users Group. Meetings: 1st. Mon. Bracher School Cafeteria, cnr. Browers & Chromite, Santa Clara. 24 hr. BBS (408) 249-7722, 300/1200 baud.

ABACUS - Atari Bay Area Computer Users Society. Meetings: 1st Sat. 19th Avenue Diner, 19th & Lincoln Aves., San Francisco, CA. Free meetings open to Atari XL/XE & ST users. With membership $15/yr, comes monthly newsletter, discounts on hardware, etc.

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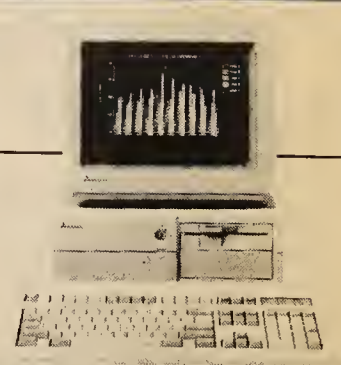

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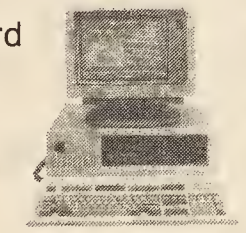

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F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs. 7:30 PM Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributer.

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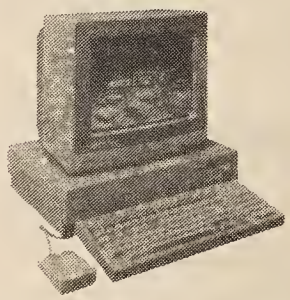

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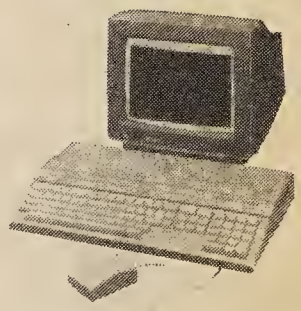

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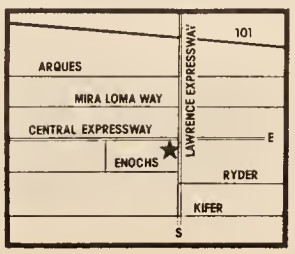

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SF PC Jr. Users Group. Meetings: monthly. Lectures & discussions on usage of software & hardware. Software & book library. For more Info, send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114.

Silicon Valley Computer Society. Meetings: 4th Wed. 7:30 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call Kent Stafford for info at (408) 286-2969.

Silicon Valley FOG. Meetings: 3rd. Wed. 7:30 PM Saratoga Community Library, 13650 Saratoga Ave.

South Bay AT&T PC UG. Meetings: Call for info. (408) 226-0116

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Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed. 6 PM Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. $24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

Diablo Valley PC Users Group. Meetings: Walnut Creek, CA. Write: P.O. Box 8040, #117, Walnut Creek, CA 94596.

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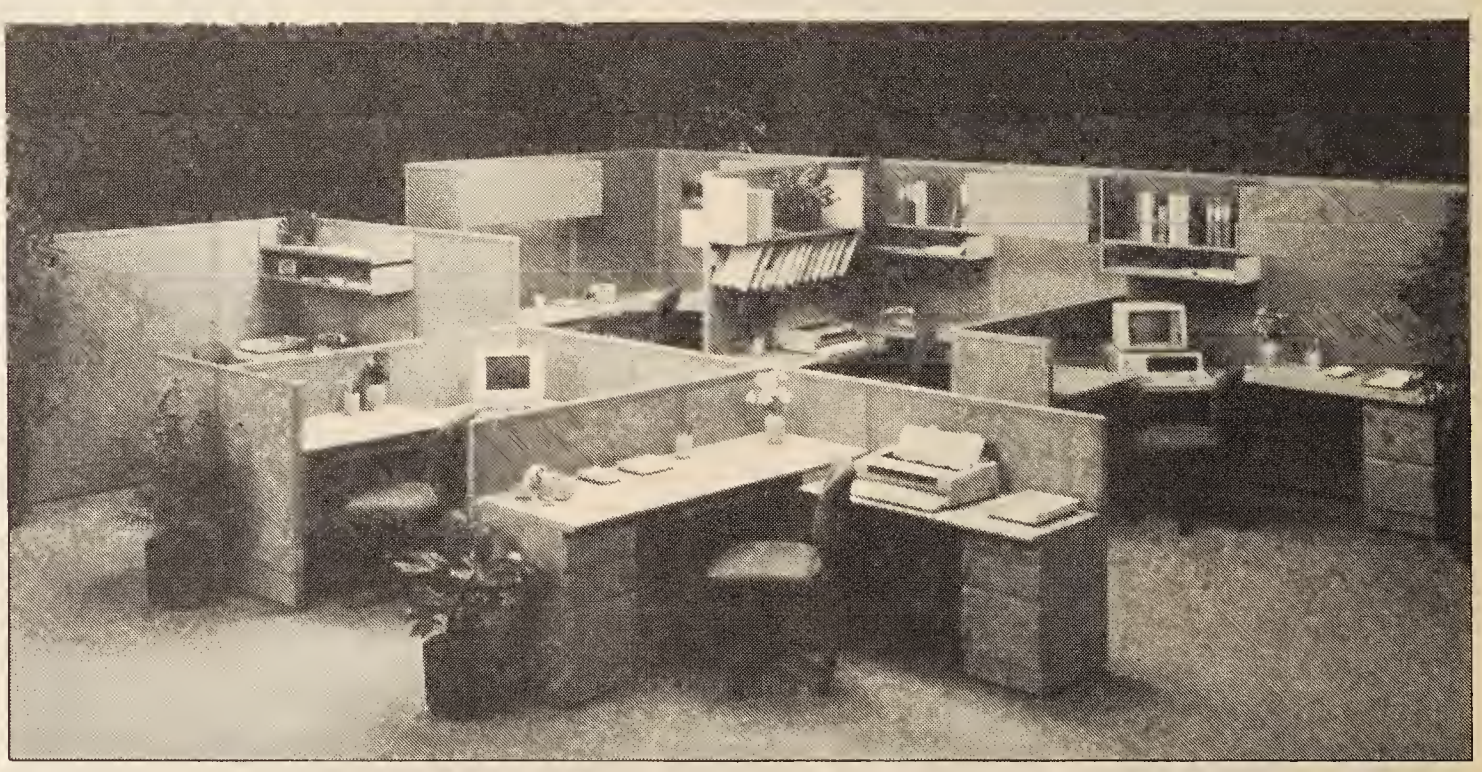

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BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues. 7:30 PM Albany Senior Center,846 Masonic Street (just north of Solano) in Albany, CA. Voice:(415) 534-4257. BBS:(415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

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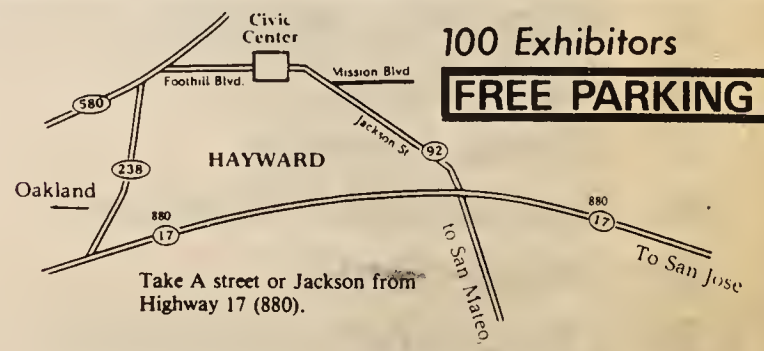

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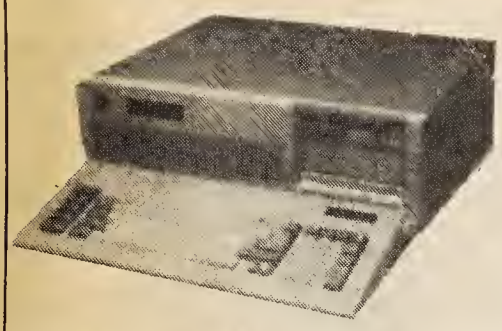

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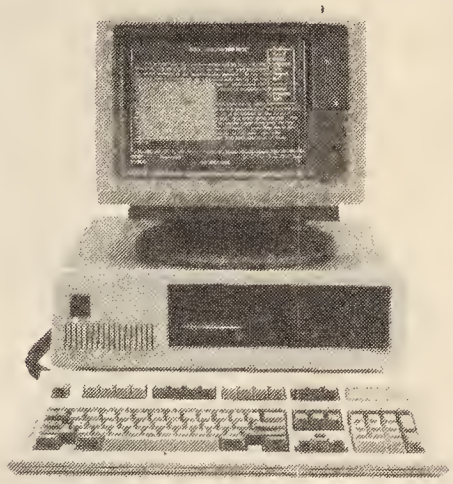

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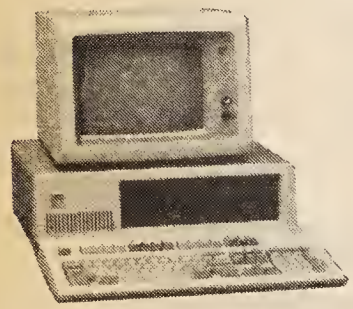

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SOLOMON

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San Francisco Solomon III Users Group. Meetings: last Wed.,odd months 6-9 PM Price Waterhouse, 555 California St. 36th Fl., San Francisco. Annual membership - $50; corp. membership - $75.

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Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat. 9 AM Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408) 735-7390, 300/1200, 8-N-1, 24 hrs.

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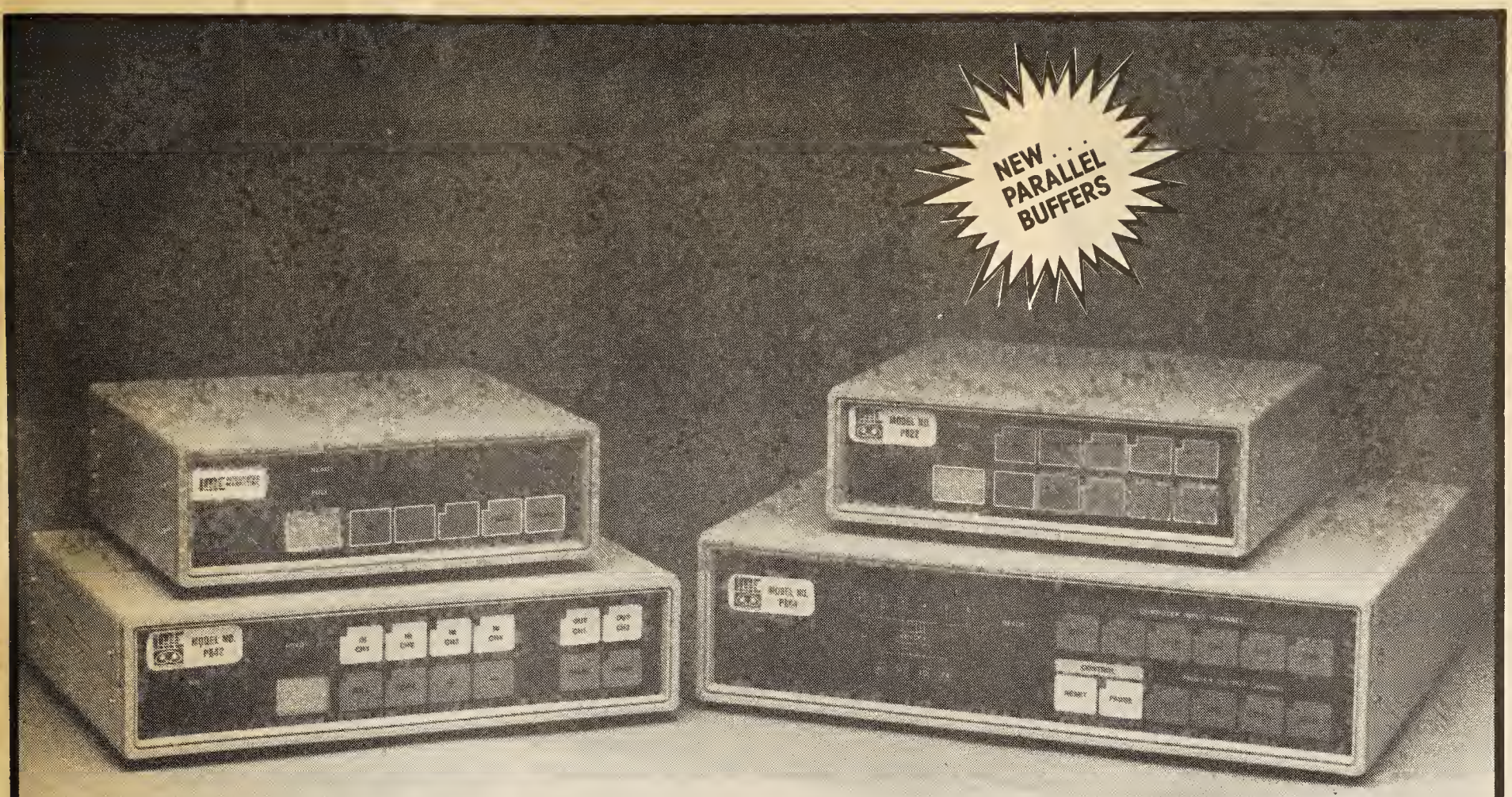

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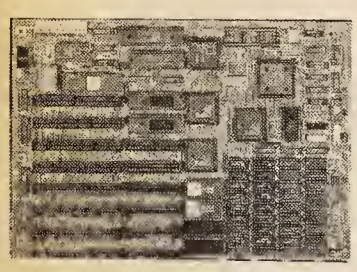

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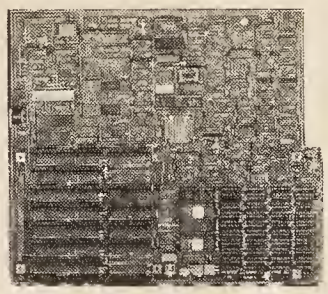

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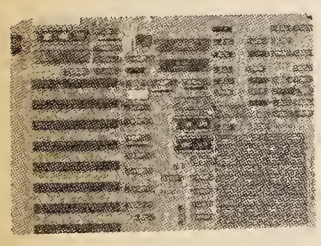

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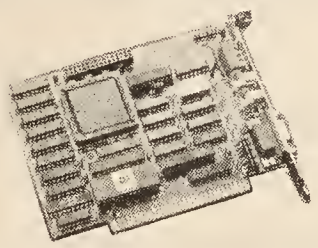

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